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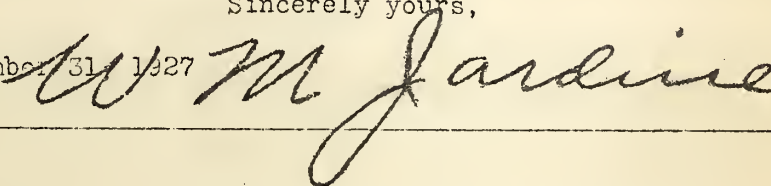
GREETINGS FROM THE SECRETARY

Dear Mr. Redington:

The year just drawing to a close has been one of marked progress in the Department, and I am grateful to you and your associates for all that you have done. I know of no group of men and women whose ability, interest in truth, and whole-hearted willingness to cooperate is greater than that of the personnel of the Department of Agriculture. I want to extend to you and your associates my best wishes for a New Year full of achievement, prosperity, and happiness.

Sincerely yours,

December 31, 1927



CHIEF CALLS ON CITIZENS TO SUPPORT GAME WARDENS

In a signed editorial in the February issue of Field and Stream, the Chief of the Biological Survey urges all citizens of the country to "Back up your game wardens." For the information of that part of the public, including many sportsmen, who are less familiar than are members of the Survey with the facts in connection with the score or more of assaults in recent years by law violators on United States game wardens and the far greater number on State wardens, Mr. Redington detailed some of the circumstances, including the murder of one Federal warden, and declared that the Federal and State wardens are the infantry of the game-conservation forces. "They are literally upon the firing line," he said, "in the obscure, many-sided battle that is going on between those who believe in the perpetuation of wild life and the regulated sport of gunning, and those others--the pot-hunter, the market shooter, and the dealer in illicit game--who would callously destroy the living resources entirely in order to fill their pockets with the silver of Judas, or to gratify a degenerate lust for killing.

"The sportsmen themselves, individually and collectively, have a responsibility to the honest game warden that they cannot ignore or evade. Believing in the conservation of wild life; believing, as any true follower

of rod and gun must believe, that the wholesome blessings of stream, forest, and field belong as much to future generations as to our own, the American sportsman can not in decency stand aside to let a few men fight these battles for him. Given game wardens who are honest and conscientious in the enforcement of regulations that are reasonable and necessary; there remains no valid reason why any American community should permit isolated groups of outlaws and river rats to attempt by thuggery to take the wild creatures into their own merciless charge. . . .

"It is time to realize that the successful enforcement of sensible regulations to protect game is dependent upon the attitude of that part of the public interested in these things. Individually and through their organizations, the sportsmen should report violations, furnish evidence, and stand with the wardens who are endeavoring to do their duties. If this is done, these attempts to kill or cripple wardens and destroy the resources that they guard will not be so lightly undertaken, for no gang of outlaws is so large, powerful or reckless that it can successfully defy the sentiment of a community.

"Unity of thought and purpose among the right sort of Americans will remove these threats that, in some degree, menace every warden in the field. Such cooperation will insure adequate game-law enforcement and clear the field for progressive action in the way of restocking game covers, the control of vermin and disease, and in the establishment of the essential game refuges. If these things are accomplished so that we may hand down a restored heritage to our sons, this sacrifice of human life will perhaps not have been in vain."

GENERAL NOTES

THE SURVEY Has Birthday.--THE SURVEY is eight years old, and with this number, the 97th since the initial one in January, 1920, it enters upon its ninth year of publication, with no month having elapsed without an issue. Mr. Redington has designated the following members of the Bureau to serve as the Committee on THE SURVEY for the year 1928: Dr. W. B. Bell, Chairman; E. A. Preble, Biological Investigations; Stanley P. Young, Economic Investigations; E. R. Kalmbach, Food Habits Research; Frank G. Ashbrook, Fur Resources; Ernest P. Walker, Reservations; W. Roy Dillon, Migratory-Bird Treaty and Lacey Acts; Dr. T. S. Palmer, Importations; Mrs. A. B. Morrison, Administrative Offices; Lisle Morrison, Exhibits and Photographs; Wm. H. Cheesman, Editor; Paul H. Oehser, Assistant Editor. The Committee will welcome at any time constructive suggestions and criticisms to make THE SURVEY a more serviceable house organ, especially from men in the field, who, working at a distance, are perhaps better able to adjudge whether THE SURVEY is fulfilling to the best advantage its purpose as a medium of contact among field men and between field men and the Washington office.

Attend Boone and Crockett Club Dinner.--Dr. A. K. Fisher, Dr. T. S. Palmer, and Vernon Bailey attended the annual meeting and dinner of the Boone and Crockett Club in New York City on the evening of January 5. This organization of big-game hunters of America was founded in 1888 with Theodore Roosevelt as its first president and now numbers among its members many of the leading sportsmen and conservationists of the country. Papers illustrated by motion pictures presented at the meeting showed big game in Africa, mountain sheep and mule deer on the shores and islands of the Gulf of California, and wild ducks in northern Manitoba.

Outline of Activities.--The following outline of activities of the Bureau, recently furnished to a cooperator, is reproduced in THE SURVEY because of the interest and use it will be to members both in the field and in Washington, furnishing as it does a "bird's-eye view" of our major functions:

GENERAL ADMINISTRATION:

Direction of work of Bureau.
Publications, press, and radio.
Exhibits and photographs.
Personnel and property.
Accounts.
Mails and files.

FUR RESOURCES (Continued):

U. S. Rabbit Experiment Station
(Calif.).
Conservation of wild fur-bearing
animals.
Small-animal production (for pets
and laboratory use).

BIOLOGICAL INVESTIGATIONS:

Supervision.
Life habits and classification of
wild animals.
Geographic distribution of wild
animals and plants.
Life-zone investigations and biolo-
gical surveys of definite areas.
Bird migration.
Bird censuses.
Bird banding.
Big-game investigations.
Investigations for improvement of
reindeer in Alaska.
Reindeer Experiment Station (Alaska).

ECONOMIC INVESTIGATIONS:

Supervision.
Predatory-animal control.
Control of injurious rodents.
Control of other animal pests.
Eradication Methods Laboratory (Cok).

GAME AND BIRD RESERVATIONS:

Supervision.
Maintenance of big-game preserves
and bird refuges.
Administration of Upper Mississippi
River Wild Life and Fish Refuge.
Restocking reservations and dispos-
ing of surplus.
Administration of act protecting
wild life and public property
on reservations.
Relations with Alaska Game Commis-
sion.
Preparation of regulations under
the Alaska game law.
Permits for fur farming and graz-
ing on certain Aleutian Islands.

FOOD HABITS RESEARCH:

Supervision.
Food habits of birds, mammals, rep-
tiles, and amphibians.
Propagation of game birds.
Restocking of quail coverts (Cooper-
ative Quail Investigation, Ga.).
Surveys of food resources of water-
fowl.
Methods of attracting birds about homes,
parks, and other places.
Methods of control of injurious birds.

FUR RESOURCES:

Supervision.
Fur-farming investigations, including
studies of diseases and parasites.
U. S. Fur-Animal Experiment Station (N.Y.)
Rabbit production for meat and fur.

MIGRATORY-BIRD TREATY AND LACEY ACTS
ADMINISTRATION:

Supervision.
Administration of acts.
Interstate commerce in wild game
and parts thereof.
Importation of wild birds and mam-
mals (permits).

Conservation Measures in Congress.--Unless otherwise stated, the following bills are still in committee:

The migratory-bird conservation bill, to establish refuges, is the subject of three bills (S. 1271--H. R. 5467, Norbeck-Anthony; and S. 1966, Brookhart). The Norbeck bill has been favorably reported by the Senate committee.

A proposed migratory-bird refuge at Bear River Bay, Great Salt Lake, Utah, also is the subject of three bills (S. 1272--H.R. 69, Phipps-Colton; and S. 703, King). The Department has reported favorably on this project, and an estimate of \$350,000 has been approved for it by the Bureau of the Budget.

Other refuge bills introduced include one by Congressman Hope (H.R. 7361) to establish a migratory-bird refuge in the Cheyenne Bottoms, Barton County, Kans.; and a bill (S. 2718--H. R. 9775, Johnson-Welch) authorizing the establishment of a migratory-bird refuge in California. The Cheyenne Bottoms bill asks for an appropriation of \$350,000, and the California project specifies \$1,000,000.

The Winter bill (H. R. 478) would enlarge the Elk Refuge in Wyoming, and provide an appropriation of \$275,000 for the purpose. The Leavitt bill (H. R. 15) authorizes an appropriation of \$150,000 to carry out the Act of 1926 for the addition of lands to the Absaroka and Gallatin National Forests to increase the winter feeding facilities for elk, antelope, and other game animals of Yellowstone National Park.

Senator Robinson re-introduced his bill (S. 2456) to establish game sanctuaries in national forests. Similar bills have been before Congress for a number of years, and one passed the Senate in the last session. Other bills to create game refuges on national forests are the Hill bill (H. R. 5573), to create game, bird, and fish refuges in the Kaniksu National Forest in Washington; and the Reed bill (H. R. 8130) to create game refuges in the Ouchita National Forest in Arkansas. Another forestry measure of general interest is the McNary bill (S. 1181), authorizing a series of appropriations totaling \$40,000,000 over a ten-year period for the acquisition of lands in the Appalachian forestry system and under the reforestation act of 1924; existing law authorizes the President to reserve areas acquired under the Weeks' law of March 1, 1911, suitable for game refuges.

The McNary-McSweeney forestry-research bill (S. 1183--H. R. 6091) carries an authorization of \$150,000 to enable the Biological Survey to conduct experiments and investigations concerning the influence of forest animals, birds, and wild life on reforestation. It has been favorably reported to the Senate.

The appropriation bill for the Department of Commerce (H. R. 8269) contains an item for the Upper Mississippi River Refuge of \$25,000, for the Bureau of Fisheries.

A bill to reduce bag limits on migratory birds, the so-called Hornaday bill, was re-introduced by Senator Copeland (S. 813), and has been unfavorably reported on by the Department.

Some of the flood-control measures, particularly the Howard bill (H.R. 9576), contain provisions relative to wild-life conservation in the flood areas and provide for the establishment of refuges for birds, game, and fish.

The Englebright bill (H. R. 8553) authorizes an appropriation of \$75,000 for the destruction and eradication of predatory animals in California. It has been favorably reported on by the Department.

An executive department of conservation would be created by the Hawes bill (S. 818), and to it would be transferred the Forest Service, the Biological Survey, the National Park Service, and the Bureau of Fisheries, together with various other functions exercised by the Departments of Agriculture, Interior, and Commerce in Alaska and elsewhere concerning wild life, forestry, and national parks and monuments.

A bill introduced by Delegate Sutherland (H. R. 334) would authorize the acquisition of a herd of 20 musk-oxen for experimental purposes in Alaska. Mr. Sutherland has also introduced a bill (H. R. 335) to amend the Alaska game law in several particulars as desired by the Alaska Game Commission. A joint resolution (H. J. Res. 97) would also authorize the refund of 75 per cent of the fee required of alien trappers and fur dealers who become citizens on or before June 30, 1929. The resolution and the two bills have been approved by the Department.

At the request of the Department of Justice, Senator Norris has introduced two bills (S. 2212 and S. 2207), the first of which would prescribe Federal punishment for the killing or assault of Federal employees engaged in the performance of their official duties; and the second would allow removal to a Federal district court any civil or criminal action instituted in State court against a Federal employee arising out of an act in the performance of official duties. These measures will be of interest to the field force of the Survey, particularly to wardens and others engaged in police work.

Manuscripts for Outside Publication have been received as follows:

Denmead, Talbott. "Ducks and Dogs."

Dobyns, Harold W. "Do Burrowing Owls and Coyotes Live in the Same Burrow?"

Lincoln, Frederick C. "Bibliography of Bird Banding in America."

McAtee, W. L. "Snake Birds," "Automatic Nomenclature," "Subgenera Often

Preferable to Genera," "Stability in Nomenclature," "'Biological

Species' from the Standpoint of the Insect Taxonomist," and "Birds and

Other Checks upon Insects."

McAtee, W. L., and J. R. Malloch. "A Character for Recognition of the Family Membracidae" and "Thyreocorinae from the State of Parana, Brazil (Hemiptera: Pentatomidae)."

Mills, E. M. "What To Do with the Crow."

Nelson, E. W. "The Biological Survey."

Oberholser, H. C. "The Migration of North American Birds: Pileated and Ant-eating Woodpeckers" and "December and January Birds about Washington, D.C."

Redington, Paul G. "Work of the Bureau of Biological Survey during the Fiscal Year 1927."

Silver, James. "The Groundhog Control Controversy."

New Publications.--The following publications of the Bureau have been received:

- "Hints on the Care of Martens," Bi-103 (Revised). 2 p. Received December 13.
- "Hints on the Care of White Mice and Rats," Bi-263 (Revised). 2 p. Received December 14.
- "Common Birds of Southeastern United States in Relation to Agriculture," by F. E. L. Beal, W. L. McAtee, and E. R. Kalmbach. Farmers' Bulletin 755 (Revised), 44 p. Received December 21.
- "Rabbit-House Construction," prepared by the Bureau of Biological Survey and the Bureau of Public Roads. Leaflet 15. 8 p. Received December 23. (Reviewed in Official Record of January 18.)
- "Our Migrant Shorebirds in Southern South America," by Alexander Wetmore. Technical Bulletin 26. 24 p. Received December 31. (Reviewed in Official Record of January 18.)
- "Regulations for the Issuance of Permits for Bobwhite Quail Imported into the United States from Mexico." Service and Regulatory Announcement--Biological Survey No. 69. 2 p. Received January 4.
- "Tularemia, an Animal-Borne Disease," Bi-903 (Revised). 3 p. Received January 23.
- "Returns from Banded Birds, 1923 to 1926," by Frederick C. Lincoln. Technical Bulletin 32. 96 p. Received January 23.

The Survey's "Navy."--In reply to a correspondent inquiring about the number of boats in the "Survey's navy," with their names and "home ports," the following list was supplied and will be of interest to the members of the Bureau whose activities for the most part are restricted to the land: For the protection of migratory birds, 11, as follows: Curlew, Washington, D. C.; Canvasback, Munden, Va.; Sanderling and Brant, Atlantic City, N. J.; Plover, Salem, N. J.; Scaup, New Bern, N. C.; Mallard, Memphis, Tenn.; Duck, Omaha, Nebr.; Tern, Bellvue, Ky.; Swan, Daytona Beach, Fla.; and Sora, Peoria, Ill. For the protection of birds and fur animals in Alaska and its adjacent islands (maintained by the Alaska Game Commission), 5, as follows: Seal, Kodiak; Sea Otter, Juneau; Beaver, Nenana; La Paloma, Anchorage; Dory, Bethel. For the patrol of the Upper Mississippi River Wild Life and Fish Refuge, 6, as follows: Wood Duck, Widgeon, Beaver, Otter, Jacksnipe, and Phalarope, all at Winona, Minn., for use in the waters of Minnesota, Wisconsin, Iowa, and Illinois. In addition a number of boats without name and equipped with outboard motors are operated by game and reservation wardens of the Survey in various parts of the country.

Visitor.--Dr. K. Hirasaka, professor of zoology at the Imperial University of Formosa, Japan, visited offices of the Bureau on January 18 to obtain information regarding the Survey's work and to discuss problems with Survey men.

Take Christmas Bird Censuses.--As in previous years, several members of the Bureau took Christmas bird censuses in the vicinity of Washington last month. W. L. McAtee and Edward A. Preble, in company with Dr. Alexander Wetmore, of the Smithsonian Institution, on December 22, in the vicinity of Dogue Creek, near Mount Vernon, Va., counted 1,880 individuals of 42 species. E. R. Kalmbach, C. C. Sperry, F. M. Uhler, and James Silver on December 23 in the Port Tobacco region, Charles County, Md., saw 1,980 birds of 61 species. Other censuses by Survey men were taken by Herbert L. Stoddard and Charles O. Handley in Leon County, Fla., and by Ira N. Gabrielson in Oregon. Detailed results of these and other counts made at Christmas-time will be published in the January-February number of Bird-Lore.

Bradshaw H. Swales.--It is with regret that the death is noted of Bradshaw Hall Swales, honorary assistant curator of birds of the U. S. National Museum, which occurred on January 23 at his home in Washington, D. C. Mr. Swales was a prominent ornithologist and has been intimately associated for several years with ornithologists of the Biological Survey.

BIOLOGICAL INVESTIGATIONS

Attends Science Meeting.--Doctor Bell represented the Bureau at the annual meeting of the American Association for the Advancement of Science, held at Nashville, Tenn., December 26 to 31. This meeting afforded opportunity for contact with scientific workers throughout the country and for conferences with cooperators and others interested in the work of the Biological Survey and in plans that have been formulated for development of its research program.

Addresses Sportsmen.--Doctor Bell, on the evening of January 17, gave an address on "Tularemia" at the annual meeting of the Montgomery County (Md.) Fish and Game Protective Association, held at Rockville, Md.

Oberholser Again in Field.--Dr. H. C. Oberholser left Washington on January 15 for a tour of the South and West in the interests of the country-wide waterfowl investigations. His first stop was at Mobile, Ala., and from there he expects to cross the continent, stopping for conferences at New Orleans and other points in Louisiana, and in Texas, New Mexico, California, Oregon, and Washington. Then he plans to turn homeward, stopping en route in several of the central States.

Taylor Engaged on Grazing Studies.--Dr. W. P. Taylor during December was engaged mainly on grazing studies in cooperation with the Forest Service and the University of Arizona. A paper prepared by Doctor Taylor in collaboration with William G. McGinnies, of the University of Arizona, on "Bio-Ecology of Forest and Range" was presented by Mr. McGinnies at the meeting of the American Association for the Advancement of Science at Nashville, Tenn., under the auspices of the Ecological Society of America. Doctor Taylor also continued work on his report on the porcupine and other species of economic importance.

Band Starlings at Favorite Roost.--On the evening of January 4, E. R. Kalmbach, C. C. Sperry, F. M. Uhler, and F. C. Lincoln conducted a banding campaign with the starlings that nightly gather to roost in the cupola of the First Presbyterian Church on John Marshall Place. More than 300 were banded. Returning to the same point on the evening of January 14, the same party, augmented by L. L. Buchanan and Olin Kalmbach, captured and banded an additional thousand of these birds, and also recaptured 14 of those banded on January 4.

Bulletin on Banding Returns Issued.--"Returns from Banded Birds, 1923 to 1926," Technical Bulletin 32, by F. C. Lincoln, was published on January 23, and copies may be had on request. For the period under consideration, 10,338 returns were reported to the Survey, as compared with 1,746 during the initial period 1920 to 1923 reported upon in a previous bulletin. Since the bird-banding work was taken over by the Biological Survey, nearly 270,000

birds have been banded, 234,692 of these during the period covered in the present report. The records are of much interest as showing the remarkable growth of activity in the banding method of ornithological research and the increase in accomplishments of the thousand or more volunteer bird-banding cooperators of the Bureau. Each banding record in the new bulletin shows the place and date of banding, the number of the band, and the place and date of recovery. In addition there is a list of localities in which the birds reported were banded and the names of the cooperators who attached the bands.

Banded Tern Found Dead in France.--A communication from Prof. Robert Poncy, of Geneva, Switzerland, incloses a clipping from Le Chasseur Francais to the effect that M. Rober Pradier, of Port Dauphin, La Rochelle, France, found on October 1, 1927, on the Greve de Marsilly, near La Rochelle, "a kind of black-headed gull, known in the region as 'hirondelle de mer,' or sea swallow," and carrying on its right foot an aluminum ring with the inscription: NOTIFY BIOL. SURV., and the number 548656. M. Pradier would be glad to learn, the account said, the habitat and name of this bird, as well as the date on which it was banded. The Survey finds that band No. 548656 was that of an Arctic tern (Sterna paradisaea) banded when it was between 1 and 5 days old at the Red Islands, Turnevick, Labrador, by Oliver L. Austin, of Tuckahoe, N. Y., who at the time was on an expedition to Baffin Island, in connection with which he was banding birds on their northern breeding grounds for the Biological Survey. The straight distance from Labrador to the coast of France is about 4,200 miles, a remarkable travel record for so young a bird. This is the second trans-oceanic bird return in the records of the Survey, the first being that of a common tern (Sterna hirundo) banded as a nestling on the coast of Maine in 1913, and recovered four years later in the delta of the Niger River on the west coast of Africa.

Writes Article for National Geographic.--"Bird Banding, the Telltale of Migratory Flight" is the title of an extended article by Dr. E. W. Nelson appearing in the National Geographic Magazine for January, 1928. Through the courtesy of S. Prentiss Baldwin, of Cleveland, Ohio, field men and bird-banding cooperators of the Survey have been furnished copies of a specially printed separate of the article. Profusely illustrated, it tells the story of bird-banding from its beginning and shows how this method of research is being applied in the solution of many problems of the bird student. If, for any reason, field men have not received copies of the separate, there are a few yet available in the Bureau.

Studying Grazing Methods in States.--W. B. Miller, range examiner at the Bureau's Reindeer Experiment Station at Fairbanks, Alaska, is on special detail to the Washington office engaged in preparing reports on the Alaska reindeer work and studying methods and equipment used in the United States, with a view to making adaptations that will fit conditions found in the Territory. Before returning to Alaska he will visit various field stations of the Forest Service where grazing and range studies are in progress.

Live Beaver Exhibited.--At the meeting of the Biological Society of Washington on the evening of January 14, Vernon Bailey exhibited one of two beavers recently purchased from a Michigan beaver farm by Victor J. Evans for his Acclimation Park near Washington. The animal behaved as well as could be desired, sitting on the table in front of the audience and finishing its supper of sweet potato and crusty rolls and making no objection to the whole audience coming about and stroking its fur and feeling its scaly tail.

Scheffer on Bulb-pest Work.--Theo. H. Scheffer, at Puyallup, Wash., during December and the early part of January, continued his investigations of rodent and mole depredations on bulbs. This work involved trips to southwestern Washington and western Oregon. Valuable statistics were also obtained on the status of seals and sea-lions on the northwest coast, through the cooperation of the State fish and game organization.

Visitor.--Donald R. Dickey, of Pasadena, Calif., assisted by his secretary, Miss Dorothy Bennett, has been studying his large collection of Salvador mammals in the museum offices during the past month. The Biological Survey collection of mammals contains such important material that no detailed taxonomic study of North or Middle American mammals is possible without using it for comparative purposes.

Leaflet Issued on Tularemia.--A mimeographed leaflet (Bi-903) on "Tularemia, an Animal-Borne Disease" has recently been issued and copies sent to all field men of the Bureau. The subject has been given wide publicity, particularly following Mr. Redington's address on the subject before the Game Conference in New York in December. The new leaflet is in the nature of a warning to all who are likely to come in contact with infected animals, which are able to transmit the disease to man. The history and nature of tularemia are stated, symptoms are described as found in man and in wild rabbits, and protective measures are outlined. Additional copies of the leaflet may be had as needed upon request addressed to the Bureau. (See Official Record of Jan. 25, 1928.)

FOOD HABITS RESEARCH

Studying Crow Problem.--E. R. Kalmbach left Washington on January 16 for Gallatin County, Ill., where he will study the crow problem that has existed for some time in the lowlands along the Ohio and Wabash Rivers. Banding of crows at a winter roost will be attempted to obtain definite information regarding the seasonal movements of these birds and also to determine the efficacy of crow traps as a control measure at roosts.

Bird-Stomach Figures Compiled.--Figures compiled at the close of the past calendar year show the number of bird stomachs examined during the year to be 1,699, the total number of examinations to date 96,950, and the whole number of stomachs catalogued 179,046.

FUR RESOURCES

Cites Need for Alaska Fur-Animal Experiment Station.--Dr. Earl Graves, who is investigating fox-farming conditions in Alaska in cooperation between the Survey and the Territorial government, is of the opinion that a fur-animal experimental station similar to the one at Saratoga Springs, N. Y., should be established in Alaska to demonstrate to fur farmers of Alaska the necessity of having the breeding and feeding of foxes under complete control if they are to be handled profitably.

Rabbit Station To Be Dedicated.--The dedication of the Rabbit Experiment Station at Fontana, Calif., is scheduled to take place on March 3. D. Monroe Green, director of the station, reports that a local committee has been appointed to make necessary arrangements and that plans have been made for the Governor and other State officials to be present. Mr. Redington is planning to attend the exercises and represent the Department.

Visits Fur-Animal Experiment Station.--On January 3, Mr. Ashbrook visited the Fur-Animal Experiment Station at Saratoga Springs, N. Y. There have been 39 surplus foxes pelted there this season--6 silver, 5 cross, and 28 red pelts. These skins are of exceptionally good quality, and it is estimated that they will bring at least \$1,200. Seventeen female and 12 male foxes have been retained for breeding this season.

Work on Fox Diseases Progressing.--Dr. J. E. Shillinger reports that the work carried on at the University of Minnesota on diseases of foxes is progressing satisfactorily. The transmission of the disease encephalitis through a series of animals is being made in an effort to become more intimately acquainted with the infective organism and the possibilities of its spread and immunization against it under natural conditions.

Conference on Fur Statistics Held.--David C. Mills and H. J. McMullen, of the National Association of the Fur Industry, visited the office early in January to discuss various phases of the work of this division. A joint conference was held with Thomas J. Biggins, of the Bureau of Foreign and Domestic Commerce of the Department of Commerce, to determine policies to be followed in assembling statistical data on furs and the fur industry and in disseminating it to the general public.

ECONOMIC INVESTIGATIONS

Rodent Leader at Washington Office.--Donald A. Gilchrist, leader of rodent control in the Arizona district, arrived in Washington on January 10 and will remain in the Washington office on detail for two or three weeks.

Ill with Pneumonia.--The Bureau is sorry to learn that John W. Crook, assistant leader of predatory-animal control in the Colorado district, has contracted pneumonia and is in the hospital at Durango. It is believed that Mr. Crook's illness was brought about by exposure while conducting cooperative predatory-animal work on the San Juan National Forest under extreme weather

conditions. The Bureau wishes him a speedy recovery and hopes that in the near future he will be back on the job once more.

Hunter Loses Way in Blizzard.--Hunter Fred Martin, in the South Dakota district, while working on his trap and poison lines during the latter part of December, was overtaken by a blizzard. His horse fell and broke its leg, so that it had to be shot. Hunter Martin wandered about the rest of the day and all night and did not reach a ranch house until the next morning. Louis Knowles, leader in the South Dakota district, reports that Mr. Martin is ill from the exposure suffered.

Married.--Miss Edna K. Newman, clerk in the Salt Lake City office, was married to Sheldon Thomas, during the latter part of December.

Rabies in Nevada.--The Department of Veterinary Sciences of the University of Nevada reports two cases of rabies during December, one an infected bobcat and the other a domestic house cat.

Prairie Dogs in Cemetery.--After a struggle of 13 years by citizens of Flagstaff, Ariz., to rid a cemetery at that place of prairie dogs, this task has finally been completed, but not without the aid of the Government rodent crew, which worked in that section during the past season. Donald A. Gilchrist, leader of rodent control in Arizona, was instrumental in putting the Government crew to work in the cemetery to exterminate the rodent pests; portable gas force pumps and rolled oats mixed with thallium were used. The Flagstaff cemetery and adjoining forest land contained 9,000 prairie-dog burrows. Mr. Gilchrist reports that a few days after the poisoned grain was put out the burrows were all plugged. Two hundred were reopened by the animals, and to these the rodent crew went with the gas pumps on rainy days, injecting 15 strokes of gas to each burrow. From the 200 burrows thus treated and then plugged only six prairie dogs burrowed out. Into these burrows was then forced a double quantity of gas, and no rodents have been seen since.

Exhibits Win Blue Ribbons.--Mr. Gilchrist also reports that exhibits displayed by his office depicting rodent-control operations in Arizona won four blue ribbons at the county fairs held in Navajo, Apache, Greenlee, and Graham Counties. The winning exhibit was made up of charts showing the distribution of rodents in Arizona and illustrating methods of control. For demonstration purposes live prairie dogs, pocket gophers, cotton rats, kangaroo rats, porcupines, and ground squirrels were shown.

Mice Damage Stopped at Radio Station.--Ira N. Gabrielson, leader of rodent control in the Oregon district, in company with an agronomist of the Oregon Agricultural College and a U. S. Navy officer, visited on December 6 the Radio Compass Station at Empire, Oreg., to check damage done by mice to plantings put out to stop sand-dune movement, which has been, and still is to a certain extent, threatening the radio-station buildings. The movement of the dunes where vegetation has been established has been stopped. Peromyscus have interfered with the work by girdling the willows planted in the area. Poison was furnished and instructions given for putting it out to prevent future damage.

Woolgrowers Vote Funds for Poison.--Stanley G. Jewett, leader of predatory-animal control in the Oregon district, reports that at a meeting of the Wallowa County Woolgrowers Association on December 28 funds were provided by the association for the purchase of sufficient materials, and arrangements made with the various stockowners, for poisoning operations against predatory animals over the entire eastern end of the county, the work to be done entirely under the supervision of Mr. Jewett and paid for by the association.

New Pocket-Gopher Film Finished.--The Office of Motion Pictures of the Department has just completed a two-reel motion picture entitled "Million Dollar Pockets." This is a film descriptive of the pocket gopher, its habits, damage to hay lands and crops, and methods for its control.

Large Coyote Taken.--Luther J. Goldman, leader of predatory-animal control in the Idaho district, reports the killing by Hunter Lewis Hale of a coyote weighing 44 pounds on the Caribou Forest project in that State.

Mice Damage Grain in Sacks.--Joseph Keyes, leader of rodent control in the California district, in a report on the survey being made at the request of the California Warehouse Association of rat and mouse conditions in certain warehouses of the Sacramento Valley, says that the damage to grain and grain bags during the past year was startling and that the aggregate losses were not less than \$100,000. In one warehouse 10,000 gunny sacks, worth 14 cents apiece, had to be used to resack the grain at the time of shipment in spring. The loss of grain, labor, etc., in addition to the bags, amounted in this one warehouse to more than \$5,000. Damage was largely the result of mice cutting the bags and carrying off the burlap for nests, besides that to the grain that was eaten or wasted. In the moving of 1,500 bags each day the men were lucky to find 100 bags that required no mending.

Tax Levied for Control Work.--According to L. L. Laythe, leader in the Colorado district, the county commissioners of Saguache County have set a levy of 0.2 of a mill on tax payers, which will raise approximately \$2,200 to be divided equally between rodent and predatory-animal work in cooperation with the Bureau.

Reports Good Work by Hunters.--A. E. Gray, leader of rodent and predatory-animal control in the New Mexico district, reports that the weather was much cooler there in November than during the preceding month and that the number of predatory-animal furs sent in by his hunters was gratifying. Some hunters sent in enough furs to pay the cost of operations on their particular projects.

Resigns.--W. A. Mullins, assistant to Mr. Gray in the New Mexico district, resigned on November 7. J. C. Gatlin, who has directed the pocket-gopher work in the Mesilla Valley, has been given the position.

Rat Drive in Texas.--L. C. Whitehead, leader of rodent control in the Texas district, reports that as a result of a drive on rats carried on recently in Gregg County through the schools approximately 15,000 rat tails were turned in. The prizes offered to winners by contribution and purchase by the Gregg County central committee cost \$114.

During this rat drive 1,200 traps were sold through the hardware companies, and 2,000 pounds of poisoned baits were put out by cooperating farmers.

Fur Companies Want Rabbit Skins.--Louis Knowles, leader in the South Dakota district, reports that fur companies are carrying on extensive buying campaigns for rabbit skins, one company advertising for a million skins. One produce company has 69 buying stations in the State, and others are sending out daily quotations on rabbit skins.

Gives Series of Radio Talks.--G. C. Oderkirk, leader of the Indiana-Illinois-Wisconsin rodent-control subdistrict, gave a series of six radio talks on the control of rodent pests of his district over Station WLS, Chicago, on January 12, 13, and 14. An attempt will be made by Mr. Oderkirk to check up on the value of this type of extension activity.

Honored by Federal Group.--According to the Tacoma (Wash.) News Tribune of January 9, Leo K. Couch, leader of rodent control in the Washington district, has been elected vice president of the Olympia Federal Business Association. This organization extends its membership to all Federal workers in government offices in the Olympia zone.

GAME AND BIRD RESERVATIONS

Birds Scarcer at Conconully.--Warden Chas. M. Conger, of Conconully Bird Reservation, Wash., reports less nongame birds at the refuge during December than in previous years.

Attends Meeting of Montana Sportsmen.--Warden Frank H. Rose, of the National Bison Range, Mont., attended the annual meeting of the Montana Sportsmen's Association, at Helena, on December 12 and 13. Resolutions were passed favoring the correction of boundaries of the Bison Range by adding an area along the Jocko River, the establishment of additional bird refuges in Montana, protecting areas of cover adjacent to refuges, and the planting of duck foods; a resolution was also passed requesting the Game Commission to continue cooperation with the Biological Survey in the banding of ducks.

Game Shipped from Sullys Hill.--A young cow elk has been shipped from Sullys Hill Game Preserve, N. Dak., to Wadena, Minn., for the city park; and a 3-year old buffalo cow and a 2-year old bull elk were taken by truck to a city park at Minot, N. Dak.

Plenty of hay is scattered over about 400 square yards at this preserve so that the elk are able to get a sufficient quantity when they come to the feed yard. No hay is wasted, as the buffalo clean up all that the elk do not eat, and then fresh hay is put out for the elk and buffalo.

Warden Nelson Attends Meetings.--On December 15, Warden A. P. Nelson, of the Elk Refuge, Wyo., attended a meeting called by the chairman of the Elk Commission Advisory Board for the purpose of making recommendations on lands that should be purchased and added to the refuge. A week later Mr. Nelson attended a meeting called by the Wyoming State game commissioner at Jackson to make recommendations as to areas that should be closed by the com-

mission to elk hunting.

Feeding of the elk began at the Elk Refuge on January 12.

Cold Weather at Blackbeard Island.--Warden J. F. Casey, of Blackbeard Island Bird Reservation, Ga., reports that unusually cold weather has prevailed in that locality and has depleted the number of their usual bird visitors, including waterfowl, by 85 per cent or more. He believes that the outside islands as far as Cuba should show a marked patronage of the feathered tribe until warmer weather.

Big Lake Refuge Under Ice.--Water on Big Lake Bird Reservation, Ark., reached the spring stage on December 31 and was three feet deep under the warden's house at Butterfly Camp, with the temperature 2 degrees below zero. About three inches of ice formed all over the refuge. Ducks were very scarce.

Game Wardens Visit Big Lake.--U. S. Game Warden George M. Riddick, formerly warden of the Big Lake Reservation, together with State Game Warden Otto Commins, recently visited Big Lake and vicinity, and with Warden L. L. Bryan made a tour of the reservation and the general locality. Two non-resident hunters were apprehended and fined \$45 and \$75 respectively.

New Headquarters at Lake Malheur.--More commodious and comfortable quarters have been leased for the warden at Lake Malheur Bird Reservation, Oreg., and Warden and Mrs. George M. Benson moved to their new home on January 1.

Two Antelope Die at Niobrara.--As the result of a severe storm and blizzard at Niobrara Reservation, Nebr., in December, two antelope died there-- a doe and one of her twins of the past summer.

Alaska Game Law Violators Get Jail Terms.--Three natives of the Kuskokwim Valley, Alaska, were recently convicted in the United States commissioner's court at Bethel for keeping foxes in captivity without a permit, and were sentenced to 75 days each in jail. The natives had been repeatedly warned to cease digging out fox dens and otherwise molesting the animals; and when they brought the foxes into the village they were warned to obtain permits to keep the animals or to turn them loose. They defied the local people who advised them and permitted seven of the eight foxes to starve to death. The commissioner, in imposing the sentences, indicated that 30 days in jail seemed to be considered by the natives a pleasant vacation, so he gave the heavier penalty with the object of stopping such wasteful methods.

IMPORTATIONS

Rare Pigeons Imported.--Among the rare and interesting birds imported during the month were five Caroline Island pigeons, which were entered at San Francisco on December 23.

Holiday Trade Big.--Unusually large shipments of birds and mammals were brought in for the holiday trade, permits being issued for a total of 65,398 birds. Among these were a few species of game birds, including 5,460 Hungarian partridges.

Permits Issued for Foxes.--Permits were issued during the month for the entry of 755 foxes from Canada.

MIGRATORY-BIRD TREATY AND LACEY ACTS ADMINISTRATION

Examine Fur Records.--F. L. Earnshaw spent January 12 to 14 in New York City where he was engaged in making Lacey Act investigations and assisting Warden P. S. Farnham in examining records of fur houses. Mr. Earnshaw and Warden Farnham located several apparently illegal shipments of beaver skins and obtained information concerning the receipt of a number of other shipments that are under Federal or State investigation.

Warden's Father Ill.--Warden K. F. Roahen, of Peoria, Ill., early in January visited his parents in Cleflin, Kans. His father was seriously ill, but latest reports are that he is improving.

Missouri Duck Hunting Good.--Warden Harry Barmeier reports that the closing of the open season on wild fowl in Missouri on December 31 marked the end of an exceptionally good duck-shooting season.

Geese Shrewd in Locating Refuge.--Warden B. R. Britton reports that during the first week in December he saw Canada geese come to the La Joya State Game Refuge, N. Mex., from points up and down the Rio Grande River, where they were resting and feeding on the alfalfa and cut-over grainfields, and begin to light on the ground after they had crossed the boundary of the refuge. Mr. Britton states that had the boundary lines been so marked that they could be seen from the air, the birds could not have located them more accurately than they did. One could approach within 50 yards of geese on the refuge without flushing them.

Idaho Appreciates Survey's Cooperation.--The Eleventh Biennial Report of the State Fish and Game Warden of Idaho commends the Biological Survey for the cooperation and aid rendered the game department in the conservation of wild life. Particular mention is made of the services rendered by U. S. Game Wardens W. H. Ransom, of Spokane, Wash., Harry Barmeier, of St. Louis, Mo., and George Tonkin, of Berkeley, Calif.

Iowa Benefits by Federal Wardens' Findings.--The Survey has received a report from the State game warden of Iowa on the disposition in State court of fur cases originating from information furnished through the Bureau. The report includes 125 cases in which total fines and costs aggregating \$3,154.90 were assessed. Of this amount, however, \$250 in fines were suspended. Warden K. F. Roahen, of Peoria, Ill., furnished information in 20 cases, and Warden Harry Barmeier, of St. Louis, Mo., in the others.

Twenty-four Cases Settled in Chicago.--Twenty-four migratory-bird treaty-act cases were successfully terminated in Federal court at Chicago, Ill., during the week of January 3, by fines ranging from \$1 to \$25, the total amount assessed being \$466. The majority of offenses involved hunting from motor boats and killing insectivorous and nongame birds. Three of these cases were submitted by Federal Deputy Warden Jans, four by Deputy Gieseler, and seventeen by Warden Scholler, who was assisted in one case by Deputy Petersen.

Cases Terminated--Reports Received During December, 1927

<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Babson*, Grant*, Smith	1	Massachusetts	Possessing plovers	\$5
Barmeier, Ferrier*	2	Missouri	Hunting ducks in close season	\$25 each
" "	3	"	Hunting ducks in close season	\$10 each
Barmeier, Ferrier*, Creech*	1	"	Killing and possessing ducks in close season	\$100
Charlton	1	Ohio	Possessing robins	\$20
Gieseler*	1	Illinois	Possessing a meadowlark	\$25
"	1	"	Possessing a robin	\$25
"	1	"	Possessing killdeer	\$25
Holland*	1	Louisiana	Possessing ducks in close season	\$10
Holland*, Pertuit**	1	"	Selling ducks	\$25
Holland*, Pertuit**, Schreiber**	1	"	Purchasing ducks	\$5
Jans*	1	Illinois	Hunting snipe in close season	\$25
"	1	"	Possessing a snipe, yellowlegs, and plover in close season	\$25
"	1	"	Possessing a woodpecker	\$25
Scholler*	2	"	Killing coots from motor boat	\$10 each
"	1	"	Possessing a grebe	\$5
"	1	"	Shooting at swallows	\$25
"	2	"	Possessing grebes	\$25 each
"	1	"	Killing a coot from motor boat	\$1
"	4	"	Hunting coots from a motor boat	\$10 each
"	1	"	Killing coots from a motor boat	\$25
"	5	"	Hunting nongame birds	\$25 each
"	1	"	Shooting at grebes and swallows	\$25
Scholler*, Petersen*	1	"	Possessing a grebe and a swallow	\$25
Shaver, Beals*	3	Minnesota	Killing ducks after sunset	\$5 each

* Federal deputy game warden.

** State deputy game warden.

Cases Reported For Presecution

<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Barmeier, Ferrier*	2	Missouri	Hunting after sunset and possessing wood ducks
Birsch	3	North Carolina	Killing coots from a motor boat
Charlton, Lewis*	4	Michigan	Possessing ducks in close season
Clarkson	1	Texas	Possessing doves in close season
Clarkson, McClusky**	1	"	Possessing meadowlarks
Creighton*, Haislip**	1	Maryland	Killing a duck from a motor boat
Gieseler	1	Illinois	Possessing a wood duck
Holland*	1	Louisiana	Possessing ducks in close season
Holland*, Pertuit**	1	"	Selling ducks
Holland*, Pertuit**, Schreiber**	1	"	Purchasing ducks
King*, Whitehead	2	South Carolina	Hunting ducks in close season
Lehmann***	1	Pennsylvania	Killing a wood duck
Mestel*	3	Illinois	Possessing killdeer
Petersen*, Scholler*	3	"	Killing grebes
" "	1	"	Hunting coots from a motor boat
Riddick, Denton**	2	Arkansas	Possessing wood ducks and gulls
Roahen	3	Illinois	Hunting ducks from a motor boat
Shaver, Beals*	1	Minnesota	Killing a duck in close season
Whitehead, King*	1	South Carolina	Hunting wood ducks

* Federal deputy game warden

** State deputy game warden

*** State game protector

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THE SURVEY

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GENERAL NOTES

Chief To Attend Dedication of Rabbit Station.--Mr. Redington left Washington on February 24 on a month's trip to the west coast, stopping en route at Las Vegas, N. Mex., to attend meetings of State cattle and horse growers and woolgrowers associations, and also at Albuquerque, N. Mex., to confer with A. E. Gray, leader of predatory-animal and rodent control in that State.

On March 3, at Fontana, Calif., Mr. Redington will take part in the dedication of the U. S. Rabbit Experiment Station, where all construction details are now completed and a large stock of rabbits is on hand. He will address those attending the ceremonies and read a message from the Secretary of Agriculture. The station, which is under the direction of the Division of Fur Resources, with D. Monroe Green, assisted by John W. Meyer, in immediate charge, is in a beautiful orange grove only a few blocks from the Fontana town site. Structures include the administration building, superintendent's residence, a garage, a number of buildings containing rabbit hutches, a large feed building, and a storage house. On the program arranged for the dedication, besides addresses by Mr. Redington and State officials, is scheduled a tour of inspection, followed by a dinner, on the menu of which rabbit meat will be featured, and a ball at the Fontana Inn. A feature of the ball will be a style revue in which models will display the latest creations in rabbit fur.

Following visits to Los Angeles and San Francisco, Mr. Redington expects to return to Washington, making stops in Phoenix and Tucson, Ariz., and San Antonio, Tex., to confer with Survey field leaders in rodent and predatory-animal control, and others.

Stuart To Head Forest Service.--The Secretary has announced the resignation, effective May 1, 1928, of W.B. Greeley as chief of the Forest Service, and the appointment of R.Y. Stuart to succeed him. Colonel Greeley leaves the Department to accept a position with a West-Coast lumbermen's association. The public service loses one of its most valuable men--a great leader--in Colonel Greeley's resignation. Stuart is well known to members of the Survey in Washington and will be remembered also by many of the field men, particularly in the Rocky Mountains region. One year ago he was made assistant forester to fill the position vacated by Mr. Redington when he was named to be chief of the Biological Survey. Stuart is a graduate of Dickinson College and the Yale School of Forestry and entered the Forest Service in 1906. After several years in western forests he was called to the headquarters of the Forest Service in Washington. In 1917 he was furloughed for military service as a major of the 10th engineers in France, and from 1920 to 1927 he was with the Pennsylvania Department of Forests and Waters. He has shown a keen interest in wild life and in the problems affecting its conservation, both in his work with the Forest Service and during his service with the Pennsylvania Department of Forests and Waters, of which he was head during the administration of Governor Pinchot, who also was formerly chief of the Federal Forest Service. The well-known interest of Colonel Greeley in matters pertaining to wild life will thus be continued under his successor.

Doctor Fisher Goes to Food Habits; Succeeded by S.P. Young.--Stanley P. Young has been appointed head of the Division of Economic Investigations to succeed Dr. A. K. Fisher, effective February 16. Doctor Fisher will be assigned to scientific research work in economic ornithology under the Division of Food Habits Research, his future activities to be concerned primarily with studies of the economic status of the hawks and owls, a subject in which he has been much interested for many years and on which he prepared publications for the Department 35 years ago. Doctor Fisher has been a member of the staff of the Biological Survey since July 1, 1885, when it was established, and is considered peculiarly well fitted to handle this assignment, having conducted the original economic ornithological work of the bureau. He thus returns to a field with which he is thoroughly familiar and in which he is a recognized authority. It is expected that as a result there will be issued a new publication on the status of the hawks and owls that will enable the public generally to understand better the beneficial and harmful traits of these species of birds. Doctor Fisher has handled the economic investigational work of the Bureau from the time of its inception, and through a stressful period. During this time the cooperation by State and other organizations with the Biological Survey has increased greatly, and the policies and work of the Bureau have become well understood throughout the country.

Mr. Young has been in Washington since May 9, 1927, as assistant head of the division. He comes to his new position well qualified by education and training, and with a large background of experience. A native of Oregon, he received his common and high-school education in Astoria, Oreg., and pursued his collegiate studies at the University of Oregon, receiving the B. S. degree in 1911, and took post-graduate work at the University of Michigan, where he received his M. S. degree in 1915. After graduation from college, he spent a short time on geological and biological investigations in eastern Oregon and in British Columbia. These investigations, combined with later work in rodent and predatory-animal control in the Southwest, gave him basic practical experience. First employed by the Survey in 1917 as hunter of predatory animals in Arizona, Mr. Young has risen through the various grades of hunter, assistant in rodent control, predatory-animal inspector, and assistant and leader, in New Mexico, Colorado, and Arizona, until in 1921 he was placed in charge of operations against predatory animals in Colorado, a position he left to become assistant head of the division in Washington. He has the distinction, as a government hunter in November, 1917, of trapping the first wolf taken by the Biological Survey in its predatory-animal control operations in Arizona. In Colorado he was instrumental in building up effective cooperation of State authorities and private organizations, and his deep interest in the various lines of work of the Survey has always been in evidence. As leader of the Colorado district he launched a campaign against renegade wolves that in six years resulted in their eradication from the State.

Conservation Measures in Congress.--Hearings on the Agriculture appropriation bill for 1929 have been held during the month, the Biological Survey section being reached during the second week of February. On February 3 the House Committee on Agriculture held a hearing on the Cheyenne Bottoms Migratory-bird Refuge bill (H.R. 7361--Hope), and on February 17 the Senate Committee on Agriculture and Forestry held a hearing on the migratory-bird conservation bill (S. 1271--Norbeck). A Senate hearing was also held on the proposed Bear River Bay Migratory-bird Refuge, and revised bills were introduced by Senator King and Representative Colton (S. 3194--H.R. 10473); the King bill (S. 3194) has been favorably reported to the Senate (S. Report 310). Another bill to establish the South Carolina Migratory-bird Refuge (H.R. 10561) was introduced by Representative Fulmer.

Senator Copeland has introduced a modified bill to reduce seasons and bag limits on migratory birds (S. 2917); it has been unfavorably reported upon by the Department, as was a similar measure also introduced by him (S. 813). A bill on the same subject has been introduced in the House (H.R. 11275--Merritt).

The Robinson bill (S. 2426), to establish game sanctuaries in national forests, has been favorably reported to the Senate (S. Report 305). The McNary bill (S. 1181), to which reference was made last month, authorizing a series of appropriations totaling \$40,000,000 to acquire lands under the Weeks Law of 1911 and the Reforestation Act of 1924, was favorably reported and passed the Senate February 6.

Survey's Correspondence Increases.--Statistics just compiled on the volume of mail handled in the Mails and Files Section during the calendar year 1927 show a decided increase in business over the year 1926. The total number of incoming letters was 116,729, as compared with 91,306 for the previous year--an increase of 25,423, or about 28 per cent. The outgoing volume was correspondingly greater, 102,876 being mailed in 1927 and 80,354 in 1926, an increase of 22,522, or 28 per cent. Hyman Liebman and his assistants have been handling the added volume of business without additional force, except during one week in October, when about 10,000 letters were received asking for information on rabbits, at which time the various divisions cooperated in opening and sorting the mail.

Press Clippings on Alaska Wild Life.--To comply with a recent request made by the Chief of the Press Service of the Department, all newspaper clippings received by the Biological Survey that relate to Alaskan wild life, including birds, game, fur animals, reindeer, and bird reservations, will be forwarded through the Bureau Editorial Office to C. H. Flory, agricultural commissioner for Alaska, at Juneau. Any clippings needed for the Survey's files will, of course, be marked for return to the Bureau. The nature of the functions and authority of the Department's ex-officio commissioner for Alaska was stated in a memorandum of the Secretary, published and commented upon in the Official Record for February 8, 1928.

Former Bureau Man Now Auditor for Western Building Association.--H. M. Hoyt, formerly employed in Biological Survey offices in Washington, D. C., and in Denver, Colo., and later auditor for European offices of the Department of Commerce with headquarters in Paris, is now auditor for a Los Angeles, Calif., investment building and loan association and its affiliated companies.

Manuscripts for Outside Publication have been submitted as follows:

- Cox, Wm. T. "The Era of Forest Fires."
 Denmead, Talbott. "The Timberdoodle," "A Million Dollar Quail Hunt," and "Just Fishin'."
 Gabrielson, Ira N. "Gull Snapshots," "Northwestern Phlox in the Garden," "Rodent Control Work Popular," "Northwestern Bulb Situation," "Oregon's Iris as Garden Plants," "Jumping Jack's Jaunts and Journeys," "Tule Lake Ducks," and "The Season's Birds of the Oregon District."
 Jackson, H. H. T. "Review of Moseley's 'Our Wild Animals'."
 Jewett, Stanley G. "Thomomys bottae laticeps in Oregon."
 Kellogg, Remington. "Review of Weigelt's 'Rezente Wirbeltierleichen und Ihre Palaobilogische Bedeutung'."
 Malloch, J. R. "Notes on Tropical American Sapromyzidae (Diptera)."
 McAtee, W. L. "Further Papers by Collinge on the Economics of British Birds," "Duck Ponds in Holland," and "Remarks on European Systems of Game Management."
 Mills, Ernest M. "Crops or Woodchucks, Which?"
 Moore, A. W. "Extra-uterine Pregnancy in Peromyscus."

New Publications.--The following publications of the Bureau have been issued during the month:

- "Amendments to the Regulations Respecting Game Animals, Land Fur-bearing Animals, Game Birds, Nongame Birds, and Nests and Eggs of Birds in Alaska" (effective April 1, 1928), Alaska Game Commission Circular No. 4, 4 p. Received February 8.
 "Mink Raising," Leaflet No. 8 (revised), by Frank G. Ashbrook. 8 p. Received February 21.

New Mailing Lists Established.--With a view to a more effective distribution of the publications of the Survey, the old bulletin mailing lists of the Bureau (Keys 208 and 210) have recently been revised and subdivided as follows into six more specialized lists: Key 218 (all publications of the Bureau); Key 208 (all publications on birds and mammals); Key 210 (publications on birds only); Key 211 (publications on mammals only); Key 217 (publications on reptiles and amphibians); and Key 209 (North American Faunas). Two other mailing lists recently established are Key BS-FO (Biological Survey field offices) and BS-ERC (Biological Survey eastern rodent-control cooperators). Field men who may wish to receive a monthly card notice of all publications of the Department may be placed on Key 377, and as the cards received will bear their name and address, all that will be needed to obtain any publication in which interested will be to check the title and mail the card to the Department.

BIOLOGICAL INVESTIGATIONS

Elk Studies Progressing.--O. J. Murie reports a rather pleasant January at Jackson, Wyo., with alternate extremes of cold and warm weather. The elk were restless and wandered much in continual search for acceptable food. The animals search the different feeding grounds for the most palatable food, which decreases steadily. Elk began to feed on the refuge on January 12, and by the last of the month about 4,000 animals were present. Naturally there has been some mortality and a number of typical cases were examined critically, and in some of the older ones disease was indicated as a contributing cause. Detailed reports have been made on each case and form the nucleus for a study of this important phase.

Count Ducks on Potomac.--Dr. W. B. Bell and Dr. H. H. T. Jackson, on February 11, made a trip down the Potomac from Washington to Widewater to estimate the number of ducks present. A total of about 76,000 was reported, as compared with 117,000 in January. Of these, the principal reduction was in the numbers of canvasbacks, while the black ducks showed an increase.

More Waterfowl To Be Banded in South.--F. C. Lincoln, early in February, went to South Carolina to obtain such data as will result in more extensive banding of waterfowl. He found that the numbers of ducks observed on different days varied considerably according to weather. He reports that the prospects for more banding in that section are bright and that with the cooperation of the American Wild Fowls' Association experiments in methods of capturing the diving ducks will soon be inaugurated.

Treating Grain Seed Against Pheasants.--Theo. H. Scheffer, at the request of the King County, Wash., Game Commission, has been experimenting on methods of treating seeds of various grains to prevent their destruction at planting time by English pheasants. Some preliminary work on this problem had been done previous to the present request, and this is being completed. For the present the work is being confined to germination tests of seeds treated in various ways. Experiments with different deterrents and barriers against depredations of moles and rodents in bulb plantations are also under way, and a number of stomachs of moles have been collected where poisoned wheat baits had been put in the burrows.

Addresses Biological Society.--W. B. Miller, range examiner of the Reindeer Experiment Station at Fairbanks, Alaska, who is studying grazing methods in the States, addressed the Biological Society of Washington on the evening of February 25 on "Alaska Reindeer and Forage Problems." His talk was illustrated with lantern slides.

Taylor Honored by Federal Employees Organization.--Dr. Walter P. Taylor, biologist stationed at Tucson, Ariz., has recently been elected ninth vice-president of the National Federation of Federal Employees, and as such a member of the National Executive Council of that organization. The Janu-

ary, 1928, number of The Federal Employee, official organ of the Federation, gives an account of Doctor Taylor's career, official activities, and scientific affiliations and accomplishments. Doctor Taylor also is president of the local chapter of the Federation at Tucson.

Jackson and Oberholser Do Work on New Manual of Vertebrates.--A representative of the World Book Company conferred with members of the division on February 15 in regard to illustrations for a forthcoming new edition of Jordan's Manual of the Vertebrates. Doctor Jackson has edited and revised that part of this well-known work relating to mammals, and Doctor Oberholser has done similar work for the bird portion.

Walrus Skull Given To Bureau.--William P. Rauch, of New York City, has donated an excellent skull of a walrus to the Biological Survey. This specimen, which has tusks two feet long, was dug up on the Pribilof Islands, Alaska, and is a valuable addition to our collections. It will be hung on the wall in the museum office.

To Collect Bats for Survey.--Wm. G. Fargo, who has a winter home at Passagrille, Fla., has generously agreed to visit the Indian Key Bird Reservation in Tampa Bay in an effort to obtain specimens of bats needed for the Biological Survey mammal collection. He found a considerable number of bats roosting underneath strips of bark on dead mangrove trees, and obtained a good series of three species--Myotis austroriparius, Nycticeius humeralis, and Tadarida cynocephala.

Learning that a large hawk had been killed near Gulfport, in December, 1927, Mr. Fargo dug up the remains of the bird and forwarded some of the skeleton to the Survey, where it was identified as a goshawk, thus furnishing the most southerly record for the species.

Visitors at Museum.--Frederick W. Miller, of the Colorado Museum of Natural History, visited the museum office on January 30, while he was en route to British Guiana on a zoological collecting trip.

Ernest Thompson Seton, who has been spending the greater part of February in Washington, made several visits to the museum and other offices of the Bureau during the month.

John B. Burnham, president of the American Game Protective Association, called at the museum office on February 3.

Arthur H. Hardisty, formerly an assistant in the care of the Biological Survey mammal collection, visited the mammal range on February 13. Mr. Hardisty is planning an automobile trip south through Georgia and Florida and expects to collect birds and mammals.

Assisting in Census Work.--Miss Pauline Johnson, of Ohio, has been assisting since January in compiling returns received from cooperators in the work of estimating the numbers of wild fowl resorting to various localities throughout the year. This assistance has been made possible by the cooperation of the American Wild Fowls' Association.

Writes Book on Carlstad Cavern, N. Mex.--"Animal Life of the Carlstad Cavern" is the title of a 195-page volume by Vernon Pailey just published by Williams & Wilkins, Baltimore, as No. 3 in the series of monographs of the American Society of Mammalogists, edited by Dr. H. H. T. Jackson. Illustrated with 66 figures and one colored life-zone map, the book describes the location and general features of the cavern, explains the life zones of the region, and discusses the ecology of the animals and plants particularly in their relation to the aborigines. The mammals, birds, and reptiles found in and about the caverns are treated in detail, and to some extent the invertebrate life is dealt with. The book is based upon explorations made by the author in the spring of 1924, Mr. Bailey being one of the first to make a detailed study of the interior of the caverns.

ECONOMIC INVESTIGATIONS

Speaks on Work of Government Hunters.--Mr. Young, on January 24, gave a talk, illustrated with lantern slides, before the Washington Civitan Club on the work of the U. S. Government hunters. He repeated the talk on February 15 at the weekly Extension Conference of the Department in Washington.

Pocket-Gopher Film Released.--The two-reel motion picture entitled "Million Dollar Pockets" was released on January 23, and several copies of the film have been sent to the western districts where pocket-gopher control is one of the major projects. The picture was filmed in Kansas by the Office of Motion Pictures with the cooperation of A. E. Oman, leader of rodent control in the Kansas district, and his assistant, Roy Moore. It is descriptive of the pocket gopher, its habits, and damage to alfalfa crops, and shows methods for its control. The story centers around two farmers, one of whom applies the Government method of pocket-gopher control, while the other is content to let his son trap the animals in a haphazard manner and collect the bounty. Before the story closes, however, the farmer who was an advocate of the bounty on the pocket gophers is won over to the Biological Survey method of attacking the problem, and the result was clean fields, which was not the case under the haphazard bounty idea.

Return to Arizona.--D. A. Gilchrist, leader of rodent control in the Arizona district, left February 11 for Arizona after a month's detail in the Washington office, during which time various rodent-control problems as they affect the Southwest were discussed. While en route to the West Mr. Gilchrist visited his old home in Iowa.

Eradicating Pocket Gophers in Arizona.--Mr. Gilchrist, through rodent specialist Everett M. Mercer, reports splendid cooperation from Yuma County, where farmers are cooperating in eradicating pocket gophers from a block of land of more than 1,100 acres. Through rodent specialist Ben Foster, he also reports splendid cooperation from the Tucson district, where in addition to poisoning pocket gophers on 2,080 acres of badly infested farmlands, cooperation was obtained for poisoning and trapping these rodents along 111 miles of canal banks.

Tularemia in Arizona and California.--Mr. Gilchrist states that Yuma doctors through the newspapers have advised residents of that locality to be careful in skinning or handling rabbits, as two cases of tularemia have been discovered in Yuma, but so far no deaths from the disease have been reported there. Charles G. Poole, leader of predatory-animal control in the California district, reports several cases of tularemia in Sacramento, Calif.

Mountain Lions Taken in Arizona.--M. E. Musgrave, leader of predatory-animal control in the Arizona district, reports that January proved to be an exceptionally good month for mountain-lion work and that his force took 20 lions during this time. Ten of these animals were taken by Hunters Miller, Black, and Jones along the Arizona-New Mexico boundary north of Clifton, Ariz. This district has been one of the most heavily infested areas of the entire State ever since work was started in Arizona.

Wolf Kills Fox in Trap.--Hunter Fred Ott, of the Arizona district, put to work in the Arivaca section west of Nogales to get a wolf that had crossed over from Mexico, succeeded in trapping this animal the first time it came over the trap line. Mr. Musgrave reports this wolf as doing a rather unusual thing in coming to a trap with a fox in it, killing the fox by biting it through the head, and then going on up the trail and blundering into the first trap it came to.

Rabies Cases Reported.--Dr. Glenn R. Bach, leader of predatory-animal control in the Washington district, reports a positive case for rabies in a dog's head sent in from Wilbur, Wash. No indication was given, however, as to whether the dog had bitten any person or livestock. E. R. Sans, leader of predatory-animal and rodent control in the Nevada district, reports a positive case for rabies in a calf from Golconda, Nev. L. L. Laythe, leader of predatory-animal and rodent control in the Colorado district, reports considerable anxiety in the Boulder section north of Denver because of an epidemic of rabies among dogs in that vicinity. Approximately 18 persons are taking the Pasteur treatment in Boulder as a result of this outbreak. So far as can be ascertained by Mr. Laythe, the disease has not yet made its appearance among coyotes in this part of Colorado. Stanley G. Jewett, leader of predatory-animal control in the Oregon district, reports that two sheepmen of southern Grant County killed a rabid coyote on January 1, and on January 26 an examination of the head of a dog sent in from the same district proved the animal also to have been suffering from rabies.

Convicted for Stealing Traps.--Doctor Bach reports that a man was convicted in justice court of Snoqualmie, King County, Wash., for stealing four traps and one coyote, and as a result was fined \$10 and costs, ordered to turn over the \$6 derived from the sale of the coyote skin, and sentenced to 30 days in the county jail. Doctor Bach has been experiencing considerable trouble from trap thieves, and he anticipates that this will be alleviated, at least temporarily, as a result of this sentence.

Rats Destroyed at Rosebud Indian Agency.--Louis Knowles, leader of predatory-animal and rodent control in the South Dakota district, reports that his assistant, W. B. Elley, has checked up on the rat experiment work done in the Government warehouses at the Rosebud Indian Agency, where poisoning rats with red squill was undertaken during the intensely cold weather of December. Owing to the cold the rats were not active when the baits were exposed, and the poison operations were believed at the time to have been a failure. Instead, however, the work was evidently highly successful, for Mr. Elley was later informed that no rats had been seen there since the work was done in December, and that all the flour stored where the rats had been previously working was in good condition.

Talks on Rodent Control in Oregon.--I.N. Gabrielson, leader of rodent control in the Oregon district, reports that his assistant, J. F. Branson, has spoken in recent months in 31 meetings to 1,550 persons in Douglas County on methods of rodent control.

Hunters Back on Job.--John W. Crook, of the Colorado district, who has been ill with pneumonia, is reported gradually recovering and expects to be back at work in the near future. Hunter Fred Martin, of the South Dakota district, was able to return to duty on January 18 after being on leave following the exposure he suffered while lost in a blizzard during the last days of December.

Fights Coyote Hand to Hand.--L. L. Laythe, leader of predatory-animal and rodent control in the Colorado district, reports that Hunter W. J. Wilder, in going over his poison lines, discovered a coyote that showed signs of having taken some poison. As he did not have his rifle, he chased the coyote on horseback, caught it by the tail, and had a real hand-to-hand fight with it, but finally got it tied up. In back-tracking the animal, Hunter Wilder was convinced that the coyote took the poison fully an hour before he found it.

City Cooperates in Rat Work.--L. K. Couch, leader of rodent control in the Washington district, states that after many conferences and much planning the city council of Tacoma, Wash., has taken final action regarding co-operative rat work and has placed it under his supervision. The city has made a special appropriation of \$1,200 for the calendar year 1928, the Bureau to pay half the salary of the man employed to do the work. The Tacoma project is to serve as a demonstration on a large scale of the methods recommended by the Bureau. Mr. Couch reports that the general plan is to organize the rat work on a permanent basis, which may require several years of effort. All breeding places will be thoroughly covered; then a general educational campaign that will acquaint the people with the rat problem will be carried on, and a man will be employed full time to work with poisons. This man will have the status of a sanitary officer with power to enforce city ordinances, but his authority will not necessarily be used except as a last resort. Mr. Couch reports that Mr. Gabrielson and his assistant Mr. Speer, who are engaged in rat work in Portland, Oreg., gave valuable services in helping to organize the Tacoma campaign. The drive was started on January 23, when calcium cyanide was applied to the main dump on the tide flats, with the result that in three days' time 1,057 dead rats were piled in one place, a number estimated to represent about one-tenth of the rats actually killed.

Follows Lion Track Four Days.--G. E. Holman, leader of predatory-animal control in the Utah district, reports that Hunter Taft struck a lion track on January 23 and followed it for four days. The dogs finally treed the animal near the place where they first struck its track just after it had killed and eaten a bobcat caught in one of Mr. Taft's traps.

Making Collection of Utah Rodents.--For some time R. S. Zimmerman, leader of rodent control in the Utah district, and his assistant, A. W. Moore, have been making a collection of Utah rodents, and Mr. Zimmerman reports that at the present time they have a fine assortment. Their catalogue indicates that 170 specimens complete with skulls and data have been prepared. The collection comprises 18 genera of rodents and one of insectivores. One genus of *Zapus* constitutes a new record for Utah. The entire collection of nine specimens of *Zapus* comes from localities on the Manti National Forest in Sanpete County at an elevation of more than 8,500 feet. The extent of the range within the State has not been definitely determined. A newly recorded species for Utah is to be found in the series of pocket gophers that have been collected. This collecting has been done mainly by Mr. Moore in about eight months' time in connection with his regular field work in the district. Identifications were made by the Division of Biological Investigations.

Breaks Leg.--Hunter Bradshaw, of the California district, met with a serious accident the last of January that resulted in the breaking of his leg near the hip.

Hold Fur Sale.--A. E. Gray, leader of predatory-animal and rodent control in the New Mexico district, reports that the first fur sale of the season was held on January 15, from which a total of \$6,256.58 was realized, 41 per cent of all operating costs. The bulk of the furs sold were taken in October, November, and December. The success of this sale, one of the largest ever held in the district, was due not only to the high prices paid, but also to the fact that more of the animals taken were accounted for by pelts turned in, and the majority of the pelts showed that they had been given proper care and preparation in the field.

Appointments.--J. A. Lowry, of Washington State, was appointed junior biologist in the Washington district, effective January 3; Donald Spencer, of Colorado, in the Texas district, effective January 3; Wallace Smith, of Oregon, in the South Dakota district, effective February 1; and John F. Moyer, of New Mexico, in the New Mexico district, effective February 1.

Sympathy of the Bureau is extended to Mr. and Mrs. Dorr D. Green, of Denver, Colo., who lost their baby daughter on February 12. Mr. Green is assistant in the Colorado rodent-control district. Sympathy is extended also to E. S. Hoek, clerk in the Oregon district, in the loss of his wife, who died February 14.

Back from New England.--James Silver, leader of rodent control in the Eastern district, returned to Washington on February 27 from Massachusetts and Connecticut where he spent a week with Ernest M. Mills, sub-leader stationed at Amherst, Mass., experimenting in control methods against European hares and porcupines.

FOOD HABITS RESEARCH

Crow Studies Frustrated.--E. R. Kalmbach returned to Washington on February 12 after about three weeks work on the crow problem in southern Illinois. Unusually mild weather and practically no snowfall completely frustrated attempts to trap crows for banding purposes. Late harvesting of the corn crop, much of which was of poor quality, and the abandonment in the fields of much grain that could not be marketed gave the crows an unlimited food supply. It was found impossible to compete with this situation even by using carcasses as bait. An appraisal of conditions from the standpoint of control through poisoning gave little encouragement to the possibility of a wholesale reduction in the numbers of the birds, owing to the great prevalence of food and the lack of snowfall.

FUR RESOURCES

Sell Fox Pelts from Fur-Experiment Station.--Mr. Ashbrook and Dr. Karl B. Hanson on January 27 visited New York City in connection with the sale of the 39 red, silver, and cross fox skins taken from animals at the Fur-Animal Experiment Station, Saratoga Springs, N. Y.

Addresses Fox Association.--Dr. J. E. Shillinger attended the meeting of the Minnesota Fox and Fur Breeders Association at Minneapolis, Minn., in January, and gave a talk explaining the activities of the Federal Government on behalf of fur farmers.

Called to Investigate Fox Disease.--During the latter part of January Doctor Shillinger was called to investigate the cause of excessive losses of animals on a fox ranch at Spokane, Wash. He visited the State College at Pullman, Wash., and conferred with veterinarians concerning fox diseases. He made post-mortem examinations of foxes in Spokane and collected tissue specimens in formalin for microscopic study in the laboratory at the University of Minnesota.

GAME AND BIRD RESERVATIONS

Losses of Big Game Heavy at Bison Range.--Losses of big-game animals at the National Bison Range have been greater this year than in any previous winter since the range was established. The winter has been an especially hard one both on old elk and deer and on fawns. The unusual losses are explained by the fact that a rather severe winter followed close cropping of the better forage grasses. The Bison Range has been over-stocked for the past seven years and seriously so for the past four years. Snow has covered all, or parts, of the range, from a few inches to two feet in depth, since December 5. Conditions have been serious for the game only where associated with a shortage in their natural food supply. The previous growing season was favorable insofar as moisture was concerned, but constant grazing by an excessive number of animals kept the better forage closely cropped, and the accumulation as winter approached was chiefly of an inferior kind unsuited to maintain animals through severe weather. Heavy reductions have been made in the buffalo and elk herds through the removal, by sales, of a

considerable number of animals during the winter, bringing the game to near the forage-producing capacity of the area. The buffalo are to be penned in inclosures and fed again through the early growing season in spring in order to leave the range lightly stocked with animals at that period. It is anticipated that the range will thus be greatly benefited, and with the surplus held in check the winter conditions on the preserve should be better each succeeding year. There are at present 463 young animals in the buffalo herd at this preserve and about 300 elk are on the area in addition to the deer and mountain sheep, but further reductions in the elk herd are contemplated.

Shipments of Elk from Bison Range.--One hundred cow elk were shipped from the Bison Range during January to a purchaser who has placed the animals on a fenced area in the Big Belt Mountains, Mont. Thirty more were turned over to the State of Montana for stocking purposes and were transported, on January 21, to Wolf Creek Game Refuge, near Kalispell, Mont.

Geese Remain all Winter at Lake Malheur.--Warden George M. Benson, of Lake Malheur Bird Refuge, Oreg., reports that some Canada geese have remained all winter at the refuge. He reports also that all low ground at this refuge is covered with running water, the result of melting snows, which is rushing toward the lake on all sides. The lake, therefore, will probably be well filled during the coming season.

Many Birds at Dungeness Spit Refuge.--Warden William E. Hubbard, of Dungeness Spit Bird Refuge, Wash., states that thousands of ducks of different species and large numbers of brant are now at that refuge.

Early Flight of Birds Observed.--Warden George M. Wilson, of Belle Fourche Bird Reservation, S. Dak., reports that several flocks of geese and ducks passed over there in January, flying high and going north. They did not stop at the refuge. Warden Wilson states that this is the first time he has seen the birds go north so early in the year.

Many Birds Leave North Platte.--Probably 10,000 ducks were on the North Platte Bird Refuge the first of January, but these took flight during the foggy weather in the middle of that month, and since that time none have been seen on the refuge.

Count Made of Elk at Elk Refuge.--A count of the elk at the Elk Refuge, Wyo., was made from January 21 to February 2 on the three feeding grounds on the refuge and on the State feeding ground on the Wilson Ranch two miles southwest of Jackson. Warden A. P. Nelson reports that there were 6,662 elk on the feeding grounds within the refuge (including the area purchased by the Izaak Walton League). On the State feeding ground on the Wilson Ranch, 889 elk were counted. Approximately 30 tons of hay a day are being fed on the feeding grounds within the refuge. There are still several small bands of elk back on the Flat Creek and Sheep Creek foothills that have not yet visited the feeding grounds. If there should be a heavy snowstorm a number of these would probably come onto the feeding ground on the

League addition. Two calf corrals have been set up on the feeding ground near headquarters; also one on the feeding ground on the Germain tract and one within the League addition. All these corrals are being used to good advantage in caring for the calves.

Predatory-Animal Control Undertaken at Niobrara.--W. B. Elley, assistant in predatory-animal control in South Dakota, spent a week at Niobrara Reservation late in January and, assisted by Warden H. H. Hoyt, put out many poison baits and some traps on the reservation in an effort to destroy predatory animals on that area. A number of coyote and some bobcat tracks were seen. Several coyotes have since been killed. Many raccoon tracks were also observed on this reservation.

Terhune to Visit Washington Office.--H. W. Terhune, executive officer of the Alaska Game Commission, will arrive in Washington early in March to confer regarding suggested amendments to the regulations under the Alaska game law and to discuss matters relative to the work in Alaska.

Violator of State Laws Sentenced.--A resident of Jefferson, Minn., was tried recently in State court for trapping muskrats during the close season on the river bottoms within the Upper Mississippi Refuge in violation of State law. The defendant was fined \$25 in addition to costs of \$49.50, which he was unable to pay, and therefore was sentenced to 60 days in jail at hard labor.

Appointments.--Mrs. May R. Jefferies has been appointed stenographer in this division; Mrs. Burnetta E. Muth, dictaphone transcriber, has been transferred to this division from the Migratory-Bird Treaty and Lacey Acts division. Miss Miriam J. Horkan and Mrs. Vivian J. Sartwell have been appointed stenographers in the Winona, Minn., office. Leland L. French, has been appointed abstractor to assist Stanley B. Hall, attorney, in the Winona office. William H. Oldenburg and Ed O'Riley, Jr., have been appointed patrolmen and U. S. deputy game wardens on the Upper Mississippi Refuge.

IMPORTATIONS

Quail Shipments To Be Big.--Arrangements have been made for the importation of quail from Mexico at the three ports of Brownsville, Laredo, and Eagle Pass, Tex., beginning February 15. The number of birds for which concessions have been made by the Mexican Government this season is the largest ever authorized for shipment in any one year.

Inspects Birds at San Francisco.--Miss Mary E. McLellan, of the California Academy of Sciences, has been making the inspections of foreign birds at the port of San Francisco during the recent illness of H. S. Swarth.

MIGRATORY-BIRD TREATY AND LACEY ACTS ADMINISTRATION

Conference of Game Wardens Held.--Mr. Sheldon presided at a conference of United States game wardens, principally from districts in the Mississippi, Missouri, and Illinois River Valleys, held at the Hotel American, St. Louis, Mo., February 15 and 16. Those in attendance included W. R. Dillon,

of the Washington office, and the following Federal game wardens: Clarkson from Texas, Riddick from Arkansas, Perry from Tennessee, Linebaugh from Kentucky, Barmeier from eastern Missouri, O. D. Steele from western Missouri, Roahen from Illinois, Charlton from Ohio, Holmes from Nebraska, Shaver from Minnesota, and Mishbach from Montana. The first day was devoted to a discussion of the problems confronting the wardens in their respective districts, and the second day to detailing them to special work during the coming spring with a view to giving every possible protection to migratory birds on their return flight. The wardens practically to a man stated that they had benefited greatly by having an opportunity to discuss with representatives of the Washington office matters that had been troubling them. On the second evening of the conference the Washington representatives and the wardens had as guests at a dinner Keith McCanse, State Game and Fish Commissioner of Missouri, and C. D. Montieth, Chief of Parks and Game Refuges of Missouri. Mr. Sheldon, following the conference, proceeded on an official trip to points in Tennessee, Alabama, Florida, and Georgia. He expects to return to Washington about March 1.

Slaughter of Robins Stopped.--For many years, according to a detailed and very interesting report by Warden W. L. Birsch, Randolph County, N. C., has had its tales of vast hordes of robins that in former days used to select cedar thickets in that part of the State for a temporary roosting place. But the visitations apparently had ceased long ago with the breaking up of the roost by night raiders, who had indulged in wholesale killing of the birds. In January of this year, however, for reasons satisfactory to the birds but unknown to man, robins again sought the former attraction of these thickets and began to re-establish the roost in the shrubbery for a distance of three or four miles along both sides of a stream flowing between mountain ridges. So dense was the flight of the birds that every afternoon during the middle of January automobiles brought men, women, and children to the part of the main highway at the southern end of the roost to view the spectacle.

About a quarter to five the robins would begin to arrive, and in five minutes the air would be filled with them. As far as the eye could see, robins seemed to be dropping like snow flakes out of the heavens, to be lost in the cedar thickets, and it would be more than half an hour before any lessening could be noted in the arrivals. The flight cloud was described by witnesses as being apparently more than 15 square miles in extent, a mile wide, moving for half an hour, at 30 miles an hour. The numbers of the robins at the roost must have run well into seven figures.

Not all the people attracted by the spectacle were curious sight-seers, coming merely to gaze and to wonder. Some thoughtlessly, and others probably answering the age-old call to hunt and kill, repeated raids of former years, beginning anew the destruction of the famous roost, and in two nights wantonly slaughtered hundreds of the birds. The raids continued until local sportsmen and other friends of the birds brought the wholesale killings to the attention of the county game warden and of a member of the State game commission. These officials called in Warden W. L. Birsch and several sportsmen and business men of Asheboro who had been active in trying to break up the raids and who one night had stopped forty or more men from

molesting the birds.

On his arrival Warden Pirsch found the killing already under control through the prompt measures taken by local residents. He concurred in the recommendation made that no legal action be taken looking toward prosecution of the raiders. So thoroughly aroused have the people been by the wholesale killings that public sentiment is now strongly against any further molestation of the robins or disturbance of their roost. The action thus taken for the protection of the roost has served to inform the public regarding the legal protection of the robins, and has made it unlikely that there will be any repetition of the raids or any necessity to hale the offenders before the Federal court.

Catches 23 Offenders in One Day.--Twenty three violators were apprehended by Warden Kelsey near Miami, Fla., on January 15 for hunting migratory waterfowl from motor boats.

Fined \$10 for Exceeding Bag Limit.--Cases for exceeding the daily bag limit on wild ducks and other migratory waterfowl are rather infrequent, but one of this character was successfully terminated in Federal court at Tallahassee, Fla., on January 11, resulting in a fine of \$10. The evidence was furnished by Federal Warden Whitehead, assisted by Deputy State Game Warden Kidder.

Ten Texas Violators Fined.--Nine persons charged with killing wild ducks after sunset paid a fine of \$25 each on pleas of guilty when arraigned in Federal court at Little Rock, Ark., on January 21. The evidence in these cases was submitted by Federal Warden Riddick, assisted by State Game Warden Thomason. Another case reported by Warden Riddick, involving the sale of ducks and geese was successfully terminated at Galveston, Tex., on January 23 by a plea of guilty and a fine of \$50.

Former State Warden Convicted in Game-law Violation.--A verdict of guilty on the charge of possessing protected shorebirds was returned by a jury in Federal court at Galveston, Tex., on January 25 against a former State game warden. The court imposed a fine of \$50 or 60 days suspended sentence. Warden Clarkson obtained the evidence in this case through State Game Warden Waddell.

Fined \$100 for Killing Brant.--an offender charged with killing and possessing a brant in close season, when arraigned in Federal court at St. Louis, Mo., on January 28, was found guilty and fined \$100. The evidence was furnished by Warden Barmeier.

Four Fines in Missouri Total \$350.--Four cases involving the hunting and killing of ducks in close season were terminated in Federal court at Joplin, Mo., on January 30. Two of the defendants were fined \$50 each, one \$100, and the other \$150. Wardens Kelsey and Holmes obtained the evidence in two of the cases; the others were reported by Warden Barmeier, who was assisted by Federal Deputy Warden Mrowka.

Louisiana Court Fines 14 Violators.--Fourteen cases were successfully prosecuted in Federal court at New Orleans, La., on January 28 and 30 and February 1. Two offenders were charged with purchasing wild ducks, five with selling ducks, and seven with killing ducks in excess of the daily bag limit. One offender was fined \$5, another \$10, still another \$100, and the remaining eleven \$50 each. The evidence in these cases was obtained through the active cooperation of members of the Louisiana Department of Conservation. Federal Deputy Game Warden W. S. Holland advised the Survey of the prosecution of the cases and State Agents Pertuit, Foolkes, Schrieber, and Wendel were the complaining witnesses.

Fined \$300 and Costs for Airplane Hunting.--In response to a request from the Wagonmound Game Protective Association, Federal Game Warden Britton investigated an alleged game-law violation consisting of hunting wild geese from an airplane near Optimo, N. Mex., early in January. He was successful in obtaining sufficient information on which to predicate prosecution, and the defendant appeared in State court on January 23, entered a plea of guilty, and paid a fine of \$300, together with costs.

Cases Terminated -- Reports Received During January

<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Barmeier	1	Missouri	Killing a heron	\$10
"	1	"	Killing a brant in close season	\$100
Barmeier, Mrovka*	2	"	Hunting ducks in close season	\$50 each
"	1	"	Hunting ducks in close season	\$150
Barmeier, Ott**	1	"	Hunting ducks in close season	\$10
Clarkson	1	Texas	Possessing protected shore-birds	Suspended jail sentence 60 days
"	2	"	Hunting ducks in close season	\$10 each
"	2	"	Possessing doves in close season	One day custody of marshal
Clarkson, McClusky**	1	"	Possessing meadowlarks	One day custody of marshal
Creighton*	2	Maryland	Killing flickers	\$5 each
Gieseler*	1	Illinois	Hunting coots from motor boat	\$25
Harrell*	1	Florida	Selling a duck and coots	\$5
Holland*, Foolkes*	4	Louisiana	Killing ducks in excess of daily bag limit	\$50 each
Holland*, Pertuit**	1	"	Purchasing ducks	\$5
Holland*, Pertuit**, Schreiber**	1	"	Purchasing ducks	\$10
"	3	"	Selling ducks	\$50 each
"	3	"	Killing ducks in excess of daily bag limit	\$50 each
Holland*, Pertuit**, Schreiber**, Wendel**	1	"	Selling ducks	\$50
"	1	"	Selling ducks	\$100
Kelsey, Holmes	1	Missouri	Killing ducks in close season	\$100
Riddick	1	Texas	Selling geese and ducks	\$50
Riddick, Thomason*	9	Arkansas	Killing ducks after sunset	\$25 each
Scholler*	2	Illinois	Killing a coot from motor boat	\$25
"	1	"	Killing coots from motor boat	\$10
Whitehead	1	Florida	Killing ducks from motor boat	\$5
Whitehead, Harrell*	1	Florida	Killing ducks after sunset	\$5
Whitehead, Kidder	1	"	Possessing ducks in excess of daily bag limit	\$10

* Federal deputy game warden.

** State deputy game warden.

<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Barmeier	6	Missouri	Hunting ducks after sunset
Birsch, Bonner*	1	North Carolina	Hunting from motor boat
Blackwell*	3	Illinois	Selling ducks
Clarkson, Waddell**	1	Texas	Killing shorebirds
Creighton*	2	District of Columbia	Selling ducks
Eckert**	1	Massachusetts	Shooting a seagull
Holland*, Foolkes*	4	Louisiana	Killing ducks in excess of daily bag limit
Holland*, Pertuit**	1	"	Purchasing ducks
Holland*, Pertuit**, Schreiber**	1	"	Purchasing ducks
" "	6	"	Selling ducks
" "	3	"	Killing ducks in excess of daily bag limit
Holland*, Pertuit**, Schreiber**, Wendel**	2	"	Selling ducks
Linebaugh, Hammond*	5	Tennessee	Selling ducks
Mestel*	1	Illinois	Killing a sandpiper
"	3	"	Hunting ducks after sunset
"	1	"	Hunting ducks before sunrise
Perry	1	Alabama	Killing ducks after sunset
Ransom	1	Idaho	Killing ducks after sunset
Riddick	3	Arkansas	Selling ducks
"	1	"	Possessing wood ducks
"	1	"	Hunting ducks after sunset
Riddick, Cummings**	1	"	Possessing two wood ducks
Roehen	4	Illinois	Hunting ducks after sunset
Roehen, Blackwell*	1	"	Selling wild ducks; offering turtle doves for sale
Shaver, Beals*	2	Minnesota	Shooting at coots after sunset
" "	1	"	Hunting ducks after sunset
Shaver, Beals*, Rogalla***	4	"	Hunting ducks after sunset
Shaver, Rogalla***	7	"	Hunting ducks after sunset
Tonkin	1	California	Hunting ducks after sunset
Whitehead	5	Georgia	Killing nighthawks

* Federal deputy game warden.

** State deputy game warden.

*** Cooperator.

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GENERAL NOTES

Chief Returns from Western Trip.--Mr. Redington returned from a month's trip in the West on March 24. With Leader Gray he attended the annual meetings of the New Mexico Cattle and Horse Growers Association and the New Mexico Wool-growers Association, and spoke before the Albuquerque Game Protective Association, the Las Vegas Game Protective Association, and the Santa Fe Game Protective Association. Two days were spent in Albuquerque going over matters with Mr. Gray and with U. S. Game Warden Britton. He found New Mexico sportsmen well organized and enthusiastically behind the whole wild-life conservation program.

On March 3 he attended the dedicatory exercises of the U. S. Rabbit Experiment Station, at Fontana, Calif., and states that the hospitality accorded by the people, a large number of whom were present, could not be excelled. The station provided for the work of the Survey in studying rabbits is valued at between \$35,000 and \$40,000, work is starting there under very auspicious circumstances, and nothing appears to have been overlooked to make it fully adequate for the purpose for which it was established. Cooperation is arranged with the College of Agriculture of the University of California, by which various specialists on diseases of rabbits and on nutrition problems will aid Director Green in his work on these subjects.

Mr. Redington next stopped at Los Angeles, where ^{he} met a good many sportsmen of southern California and discussed the general migratory-bird situation with them. At San Francisco conferences were held with the Associated Sportsmen to discuss matters of interest in connection with the waterfowl of Western States, and with Messrs. Gray, Keyes, Poole, and Tonkin, with members of the State Board of Fish and Game Commissioners, with representatives of the Forest Service, and with many individuals interested in the work of the Survey.

Two days were spent at Phoenix, Ariz., with Messrs. Musgrave and Gilchrist. Mr. Redington also called on the Governor and State Game Warden Pettis. He then proceeded via Tucson to New Mexico again to investigate a proposal made by the State to establish Federal public-shooting grounds on the upper end of Elephant Butte Reservoir. This situation was looked over in company with Mr. Perry, Mr. Britton, and interested sportsmen. The next stop was at San Antonio, Tex., where two days were spent with Messrs. Landon and Whitehead.

Continuing his return trip, Mr. Redington spent a day in New Orleans, La., where he stopped to see Dr. E. W. Nelson, who is temporarily laid by there on account of illness. Doctor Nelson's condition is not regarded as serious, but it will be necessary for him to remain quiet for a considerable time. He is in the best of hands there, according to Mr. Redington, and sends his regards to the members of the Bureau. Conferences were held with the Commissioner of Conservation, Dr. V. K. Irion, and with Stanley Arthur, John Dymond, and others in New Orleans.

Mr. Redington was particularly impressed on his trip with the increasing interest of sportsmen in the work of the Biological Survey and also with the interest of stockmen in the control of predatory-animal pests.

Resigns from Mails and Files.--It is with regret that the Bureau has accepted the resignation of Hyman Liebman, who has been in charge of the Bureau's central mail and file room since February, 1924, and a member of the Survey since August, 1920. The position he has held requires close application to duty and often extra hours of labor to keep the work current, and Mr. Liebman has maintained the files in a very satisfactory manner. He has decided, however, to seek other employment in New York City, and his resignation becomes effective March 31.

Mr. Liebman is to be succeeded by Wilburn D. Hobbs, who comes to the Bureau with a high record in filing work. For eight years he had charge of the mails and files work of the Bureau of Agricultural Economics, and resigned in 1921 to engage in professional work. In August, 1926, he again entered the employ of the Bureau of Agricultural Economics, on special assignments in connection with systematizing and improving filing systems. Mr. Hobbs is a graduate of the University of Arkansas with the B. S. and A. B. degrees.

Attend Banquet of Game Associations.--The following members of the Survey attended the mid-winter banquet of the Maryland State Game and Fish Protective Association held at the Emerson Hotel, Baltimore, Md., on the evening of March 1: W. C. Henderson, Dr. W. B. Bell, Stanley P. Young, Frank G. Ashbrook, Talbott Denmead, W. R. Dillon, Frank L. Earnshaw, F. G. Grimes, and F. P. Callaghan. Doctor Bell addressed the association on the subject of "Tularemia." Other speakers included Gov. Albert C. Ritchie, of Maryland, E. Lee LeCompte, Maryland State Game Warden, and Mr. Denmead.

Address Biological Society.--Recent addresses before the Biological Society of Washington by members of the Survey have been given as follows:

"Predatory Animals and Methods for Their Control" (lantern slides), by Stanley P. Young, on March 10.
"Alaska Bird Colonies" (lantern slides), by Ernest P. Walker, on March 10.
"Muskrat Farming" (motion pictures), by Frank G. Ashbrook, on March 24.

Many Press Clippings Received.--A recent memorandum of the Acting Chief to heads of divisions and offices in Washington outlined a new procedure for handling press clippings that come into the Bureau, whereby important clippings are furnished the Secretary and the Press Service of the Department by way of the Editorial Office of the Survey, after being noted in the divisions concerned. Many newspaper and magazine articles, including editorials and criticisms, covering the work of the Bureau and striking items affecting other branches of the Department are received from field men and cooperators each week. These clippings are of much service in helping both the Department and the Bureau in feeling the pulse of the public and in learning the reactions of the press to our work in all sections of the country, most of which are represented by Survey men. A special form (Bi-599) is used upon which clippings are pasted and sent to the Bureau without letter of transmittal, and any field man whose supply may be exhausted can obtain more at any time.

Manuscripts for Outside Publication and Addresses have been submitted as follows:

Bailey, Vernon. "The Mountain Goat That Is Not a Goat."
Dillon, W. R. "Motor Boats and Wild Ducks."
Earnshaw, Frank L. "Department of Game and Fish Laws."
Jewett, Stanley G. "Limicolae of the State of Oregon."
Kellogg, Remington. "An Apparently New Hyla from El Salvador" and "Summary of Available Evidence Bearing on Migrations of Whales."
Malloch, J. R. "Three New Species of the Genus *Pedinaspis* (Hymenoptera: Psammodidae)."
McAtee, W. L., and J. R. Malloch. "A New Bicolored Species of *Megaritis* (Pentatomidae)."
Oman, A. E. "The Vanishing Prairie Dog."
Palm, Bessie W. "Modern Methods for the Study of Birds."
Preble, E. A. "Our Singing Wood-Snipe."
Rose, Frank H. "Banded Bison-Range Mallards."
Taylor, Walter P., and [W. G. McGinnies]. "The Bio-ecology of Forest and Range."

New Publications.---The following publications of the Bureau were issued during the month:

"Recommendations to Beginners in Fur Farming," Bi-956, by Frank G. Ashbrook. 7 p. Received March 15.
"Woodchuck Control," Leaflet No. 21, by James Silver. 8 p., illus. Received March 28.

Conservation Measures in Congress.---The annual appropriation bill for the Department (H. R. 11577) was reported (H. Rept. 789) to the House on February 21 and passed on March 3. It carried items for the Biological Survey totaling \$1,074,520. The bill is still pending in the Senate Committee on Agriculture and Forestry.

On March 6, the King Bear River Refuge bill (S. 3194) passed the Senate. The Robinson bill (S. 2456), to establish game sanctuaries on national forests, also passed the Senate on the same day. House Joint Resolution 216 (Haugen) to accept 488 acres of land and improvements thereon, located near McGregor, Iowa, from James B. Munn, of New York City, as an addition to the Upper Mississippi River Wild Life and Fish Refuge was favorably reported (H. Rept. 779). This resolution passed the House on March 7. The acceptance of the Munn lands for the Upper Mississippi Refuge is the subject of two Senate resolutions (S. J. Res. 96--McNary and S. J. Res. 109--Brookhart), both of which have been favorably reported upon by the Department. Another resolution of importance to the progress of the work of acquiring lands for the Upper Mississippi Refuge was introduced by Representative Andresen, of Minnesota (H. J. Res. 200), to increase the average price that may be paid for lands from \$5 to \$10 an acre; it has been favorably reported to the House (H. Rept. 983). The acceptance of the donation of two islands in the Columbia River, Walla Walla County, Wash., from the Northern Pacific Railroad as an addition to the Columbia River Bird Refuge, established by Executive Order, would be authorized by a Senate resolution (S. J. Res. 111--McNary), introduced at the request of the Department. An appropriation of

\$25,000 for conducting experiments with musk-oxen in Alaska (S. 3439-- Norbeck) has been favorably reported upon by the Department. A resolution introduced by Delegate Sutherland (H. J. Res. 222) would authorize the Alaska Game Commission to make refunds of alien license fees in certain cases.

A bill (H. R. 15) authorizing an appropriation of \$150,000 for the purchase of lands to be added to the Absaroka and Gallatin National Forests in Montana for the purpose of extending the winter range of elk and other big game of the Yellowstone National Park was favorably reported to the House (H. Rept. 898). The revised forestry research bill (S. 3556-- McNary), which contains items of interest to the Survey, was introduced on March 8. A House bill for flood control (H. R. 11889-- Rainey) provides for the conservation of fish and wild life and the establishment of refuges therefor in the regions affected.

BIOLOGICAL INVESTIGATIONS

Big-game Studies Continued.--O. J. Murie continued his work among the elk about Jackson, Wyo., during February and reports that deaths in small numbers have continued among the animals and that every opportunity to obtain useful data is being improved. Studies of the feeding habits, both in the valley and back in the hills, are being prosecuted. Ticks are much in evidence and are being collected for study purposes. Considerable dependence of the elk on various shrubs has been noted. A large band of mountain sheep and some mule deer are wintering on Flat Creek to the northward of Jackson on ground also occupied by a few elk, and these animals are also being studied as far as practicable.

Waterfowl Still Abundant on Potomac.--Dr. H. H. T. Jackson, on March 13, made an estimate of wild ducks and geese observed on the Potomac between Washington, D. C., and Cherry Hill, Va., a total of more than 88,000 including 17 species, being recorded. Species of ducks present in numbers involving four or more figures included the lesser scaup, 44,000; black duck, 18,500; canvasback, 15,000; mallard, 1,600; gadwall, 1,200. A flock of about 300 Canada geese was also seen.

Oregon Report Nearing Completion.--Vernon Bailey is bringing near completion his report on the Biological Survey of Oregon, including life zones and full accounts of all the mammals known to occur within the boundaries of the State. It is being prepared on the general plan of the "Biological Survey of North Dakota," published as North American Fauna No. 49.

Studying Jack Rabbits.--Dr. Walter P. Taylor, at Tucson, Ariz., was engaged during a part of February in compiling the results of studies of the food habits of porcupines, and this was nearly completed. About the middle of the month field work took him through parts of southern Arizona to study the life histories of jack rabbits. He later spent two days on the Santa Rita Range Reserve, studying jack rabbits in the open, and also on special quadrats. He reports that some interest is developing in Washington in the publication of the report on the birds of that State, on which he has spent a great deal of time. Doctor Taylor arrived in Washington, D. C., on March 17 for conference and work upon reports that he has in course of preparation for publication.

Reports Show Dangers of Overgrazing on Tundra.--L. J. Palmer and W. B. Miller, of the Reindeer Experiment Station at Fairbanks, Alaska, have turned in a number of reports on extensive experiments that have been carried on at Nome, Nunivak Island, Choris Peninsula, and Fairbanks, to determine various points relative to the amount of food taken by reindeer under different conditions, and also on the effect of intensive grazing. These studies show, among other results, the danger of subjecting areas of the tundra type to overgrazing, since severely denuded areas are first invaded by various grasses and sedges and can be expected to regain their original condition, with good stands of lichens, only after a period of 15 or 20 years.

To Publish "Birds of New Mexico."--Ornithologists and bird lovers will be glad to learn that negotiations have finally been completed for the publication by the New Mexico State Department of Game and Fish of "The Birds of New Mexico," by Mrs. Florence Merriam Bailey, with chapters by the late Wells W. Cooke, of the Biological Survey. Contracts have been signed with Judd & Detweiler, of Washington, D. C., for the printing, and with Maj. Allan Brooks, of Okanagan Landing, British Columbia, for painting the colored plates of birds to appear in the book. Mr. and Mrs. J. D. McCreary, of Silver City, N. Mex., have underwritten the publication, which is to be sold by the New Mexico department at cost.

The field work upon which the book is based was done by many ornithologists, including members of the Biological Survey and Mrs. Bailey. Lists of itineraries, reports of field work in the State, localities visited by observers, and State records of species were compiled by Professor Cooke. Besides the colored plates by Major Brooks, the book is to contain also an unpublished colored drawing of the Mearns quail by the late Louis Agassiz Fuertes, in addition to many text figures and distribution maps. J. Stokley Ligon, formerly of the Biological Survey and now game specialist of the New Mexico Department of Game and Fish, and R. T. Kellogg, of Silver City, who were appointed a committee in charge of publication, are, with the underwriters, responsible for making possible the publication of this important work by the State.

Visits California Bulb Farms.--Theo. H. Scheffer, at Puyallup, Wash., during early February continued his investigations on mole and rodent activities, principally as affecting the bulb industry. During the last three weeks of February and early in March he visited California, where he made somewhat intensive studies of many bulb plantations from the standpoint of mammal depredations, and conferred with the officials of various scientific organizations.

ECONOMIC INVESTIGATIONS

Jack-Rabbit-Control Demonstration.--E. R. Sans, leader of predatory-animal and rodent control in the Nevada district, reports that as a result of one night's exposure of ten pounds of alfalfa leaves with which had been mixed one ounce of strychnine, he succeeded in picking up 187 dead jack rabbits the following morning. This demonstration was carried on in Paradise Valley.

Birds Damage Fruit Buds in California.--Joseph Keyes, leader of rodent control in the California district, reports that during a reconnaissance through the fruit district of Tulare and Fresno Counties, in which he was accompanied by F. E. Garlough of the Eradication Methods Laboratory, he noted considerable damage to fruit buds by English sparrows and the California house finches. The attack of these birds on the trees was in marked evidence, the fruit buds being completely gone from many limbs. The rapidity with which the birds worked and their startling capacity are problems of no little concern. Mr. Garlough states that in one ten-acre almond orchard the housewife, relieved occasionally by her husband, has been patiently walking through the orchard with her lunch in her pocket since the first of January, clapping together two wooden slats, the noise and her presence causing many of the birds to take fright. It will probably be necessary to continue these precautions until the trees are in full bloom, a period of nearly six weeks. The solution of this economic problem in California will require much detailed study and investigation.

County Wins Suit in Ground-Squirrel Case.--During January considerable interest and concern were manifested in the California district because of a lawsuit instituted by the county of Contra Costa against a cement company to collect certain charges incurred by the county horticultural commissioner in poisoning operations against the digger ground squirrel. This suit was brought under the provision of the State law known as "force work," under which a county may collect for expenses involved in controlling rodents on lands the owners of which have refused or neglected to do so. The jury rendered a verdict in favor of the county, which was sustained by the presiding judge. Mr. Keyes gave expert testimony.

Rabies Cases.--A positive case of rabies in a calf was reported in the vicinity of Battle Mountain, Nev., on February 22. Rabies among dogs still continues to give much concern in the Boulder section of Colorado. On February 7, L. L. Laythe, leader of predatory-animal and rodent control in that State, attended a meeting of the Eastern Slope Woolgrowers Association at Longmont, where it was proposed that a committee of the woolgrowers together with several livestock associations in that section meet with the State Auditing Board to see if State cooperative funds could not be obtained for the elimination of the coyotes in that area, in order to ward off any possibility of rabies getting started among these animals. The meeting was held as planned, and it was revealed that in the city of Boulder 27 dogs, 1 goat, and 5 cattle had shown positive evidence of rabies. In the country north of Golden, Colo., between 75 and 100 dogs had shown positive evidence of this disease, and 27 persons were taking the Pasteur treatment for rabies in Boulder. The last Colorado legislature appropriated \$30,000 to be used in cooperation with the Biological Survey in predatory-animal control operations, but because of heavy over-appropriations, none of this sum has to date been available. If rabies still continues to give concern, it may be necessary to ask counties and local associations in the areas affected to raise ^{funds} for its suppression.

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Rodent Campaigns in Colorado Planned.--Mr. Laythe reports making a trip during February to the San Luis Valley, where plans were made for the continuation of the campaign against the prairie dogs. The services of several men were obtained to begin work about April 1. In company with the Forest Supervisor of the Cochetopa National Forest, Mr. Laythe visited the warden of the State Reformatory at Buena Vista and was given the assurance of the services of 12 boys from the institution who could be used in prairie-dog poisoning crews during May and June; and likewise that help by the reformatory could be counted upon in poisoning the territory around Buena Vista and on the Leadville National Forest for operations against Wyoming ground squirrels.

Coyotes Taken in Kansas.--Mr. Laythe reports that Hunter L. J. McIntosh started work February 1 at Ashland, Kans., in a cooperative undertaking for controlling coyotes, and was successful in bagging 31 during February. This is the second time that the Bureau has aided cooperatively in the control of coyotes in Kansas.

Rat Campaign in Oregon.--I. N. Gabrielson, leader of rodent control in the Oregon district, reports that in the city of Portland rat control work has continued with the usual routine operations. Splendid use also has been made of the Bureau's new film "How to Get Rid of Rats." It has been run steadily in community theaters in Portland and will later be used in some of the schools. During part of February it was shown at various theaters to about 7,000 persons, as well as to a large group of boy scouts at Multnomah Station. The film was also shown at the general monthly meeting of the Forest Service to about 100 government employees in Portland.

Success Reported with Use of Catnip Oil.--C. J. Bayer, leader of predatory-animal control in the Wyoming district, reports continued success with oil of catnip as a bobcat scent. He also states that Hunter Herman Wagner broke the record during February for the Wyoming district by trapping 25 bobcats. Prior to that time 15 was the highest number taken by one hunter in one month. A limited quantity of catnip oil is on hand in the Washington office, and any leader desiring to obtain some for scent purposes should make his wants known.

Rat Campaigns in Texas.--L. C. Whitehead, leader of rodent control in the Texas district, reports continued success in rat control operations in his district. He states that from the middle of December to March 1 a total of 1,937,504 rats were killed in 13 counties of Texas in which cooperative rat work has been carried on under Mr. Whitehead's supervision in conjunction with his assistants, Messrs. Cates, Spencer, and Gilson. This enormous total comes from rat tails actually counted and turned in through county agents, chambers of commerce, and other cooperating agencies. Bell and Fannin Counties topped the list with totals of 315,160 and 299,990 rats, respectively. Donald A. Spencer during February talked to 86 schools, with a total audience of 6,829 children and 226 teachers. The largest number of schools covered in any one day was 12, and the greatest mileage was 120.

Pocket-Gopher Control in Texas Progressing.--Mr. Whitehead reports that the cooperative pocket-gopher control operations in the El Paso Valley is progressing favorably, 21,275 acres having been covered, 1,348 quarts of carrots put out, and 339 ounces of strychnine used. So pleased are the commissioners with the work and so actively eager are the farmers for assistance that one of the cooperating commissioners has voluntarily put up funds from his precinct road fund and requested that the work be continued so that operations may cover his precinct as far as the El Paso city limits. Next season's work in this precinct has been arranged for by starting on the New Mexico line and working southward to El Paso.

Expecting Busy Rodent-Control Season.--Albert M. Day, leader of rodent control in the Wyoming district, reports an active season ahead on rodent-control operations. County appropriations in 11 Wyoming counties to date total \$20,500, which will be expended under Mr. Day's supervision in prairie-dog and Wyoming ground-squirrel control work.

FOOD HABITS RESEARCH

Quail Investigation Extended.--Mr. McAtee visited the area of the Cooperative Quail Investigation in southern Georgia and northern Florida for about 10 days in the early part of the month and inspected the work being carried on. He attended a meeting of the subscribers to the quail fund, at which the future of the work and the character of the final report were discussed. The investigation, which was to have terminated at the end of this month, was extended to June 30, 1929. The final report is to be published in book form.

Resumes Studies on Celery Leaf-Tyer.--F. M. Uhler left Washington on March 7 for Sanford, Fla., where he will carry on further studies of the relation of birds to the celery leaf-tyer. This work is being done at the request of the Florida State Plant Board and will be continued this year to note the effect of later bird migrants on this pest. Early reports from Mr. Uhler indicate only a light infestation of the leaf-tyer thus far.

FUR RESOURCES

Rabbit Station Opened on Schedule.--The U. S. Rabbit Experiment Station, at Fontana, Calif., the first institution devoted solely to the study of the problems confronting the rabbit industry, was dedicated and formally opened on March 3. In addition to the dedication exercises, the program included a luncheon, a sight-seeing trip for guests through the courtesy of the Fontana Chamber of Commerce, a banquet, and a dance. The menu for the luncheon and dinner featured such tempting delectations as "Himalayan" soup, "New Zealand White" rabbit (a la Fontana), "White Beveren" potatoes, "Chinchilla" salad, "Black and Tan" ice cream, and "Black Dutch" coffee. Both Mr. Redington and D. Monroe Green spoke at the dedication exercises and the banquet, other speakers including the dean of the University of California College of Agriculture, the secretary of the National Rabbit Federation, and local editors and officials.

Studies Outbreak on Wisconsin Fox Ranch.--Dr. J. E. Shillinger visited a fox ranch in Wisconsin on March 10, to assist in controlling an outbreak of disease. He made a number of post-mortem examinations and obtained material for laboratory study.

Fur Station Yields Rabbit Pelts.--Dr. Karl B. Hanson recently shipped 156 rabbit pelts, taken from animals raised at the Fur-Animal Experiment Station at Saratoga Springs, N. Y., to New York City for sale. This lot comprised Chinchillas, New Zealand Reds and Whites, and Blue Beverens.

Collecting Fur Statistics.--The Bureau of Foreign and Domestic Commerce, in cooperation with this division and the National Association of the Fur Industry, has been collecting and assembling statistics for publication on the annual catch of furs in the various States. An article based on these statistics will appear in an early issue of The Fur Journal.

New Leaflet Answers Fur-Farming Inquiries.--A mimeographed leaflet entitled "Recommendations to Beginners in Fur Farming" (Bi-956) has recently been made available for distribution. It is designed to answer general inquiries concerning fur farming, and a supply will be sent to field men who may desire to use it for this purpose.

Writes Book on Fur Farming.--"Fur-Farming for Profit" is the title of a book by Frank G. Ashbrook just published by the Macmillan Company, New York, in the Rural Science Series, edited by Dr. L. H. Bailey, of Cornell University. The book contains 300 pages and 127 illustrations. It is written primarily to aid the beginner in fur farming in the solution of his new problems, but it will be useful also to all who are interested in any phase of the subject. Emphasis is laid on the need to produce marketable pelts rather than to sell breeding stock. The introductory chapters present briefly the demand for fur and the history of fur farming and detail what it takes to make a good fur farmer. Considerable space naturally is devoted to fox farming, but the book also discusses the production of all other fur animals now raised in captivity in this country. Chapters also are included on transportation of breeding stock, killing and skinning the animals, marketing the pelts, sanitation, and legal aspects. The book should be valuable and of much service to practical fur farmers and nature students interested in the habits, utilization, and perpetuation of interesting forms of wild life.

GAME AND BIRD RESERVATIONS

Elk Feeding at Elk Refuge.--The latest report from Warden Almer P. Nelson states that the number of elk on the Izaak Walton League Addition to the Elk Refuge has increased to 1,700, making a total of approximately 7,500 elk being fed on the refuge. Warden Nelson assisted the State game wardens in driving about 300 elk, which were making inroads on haystacks along the Gros Ventre River, to the refuge, where they were placed on the feeding grounds. About half of these were fullgrown bulls. The coldest weather experienced this winter at the Elk Refuge occurred during February when the thermometer registered 22 to 26 degrees below zero.

Deer Captured in Wyoming.--Seven deer captured by the local State Game Warden near Elk, Wyo., were recently transported to the Elk Refuge, where they are being held in corrals prior to shipment to Kentucky. The game warden informed Warden Nelson that there were about 150 deer feeding on haystacks at the place where the seven were captured, and about the same number were seen near the Blackrock Ranger Station.

Birds at Lake Malheur.--Late in February, Warden George M. Benson estimated that there were 2,000 whistling swans on Lake Malheur Bird Refuge, Oreg., and on March 2 about 1,500 snow geese in one flock and plenty of ducks, including mallards, pintails, teals, with some baldpates, lesser scaups, and canvasbacks, as well as coots. Canada geese are also arriving there in considerable numbers.

Dr. L. E. Hibbard informed Warden Benson that a small flock of black ducks wintered on one of his ranches near Burns, Oreg., feeding with his stock near open water on the Silvies River. Warden Benson reports that the lake level was taken on March 2 and was found to be 3 feet, 1 inch, which is 3 inches higher than the highest level attained last summer, and the run-off from the high mountains is yet to come. The first great blue heron observed by the warden at Lake Malheur this season was seen on February 29.

Ducks Numerous at Big Lake.--Warden L. L. Bryan, of Big Lake Bird Refuge, Arkansas, reports that there were many mallard, pintail, and scaup ducks on the refuge early in March.

Big Game Shipped from the Bison Range.--A large bull elk was shipped on February 21 from the National Bison Range, Mont., to Duluth, Minn., for the city zoo. Ten elk have been turned over to the State of Montana for stocking territory in the vicinity of Polson. Two mule deer were shipped to a purchaser who has placed them on a fenced area in the Big Belt Mountains, Mont.

Deer Drops Antlers; Eagles at Sullys Hill.--The white-tailed deer at Sullys Hill Game Preserve, N. Dak., dropped one of its antlers on February 1, and the other on February 3. Warden W. D. Parker states that he has seen from one to five eagles, which he believes to be golden eagles, flying over Sullys Hill at times during February. They have not been molested as they are apparently doing no damage.

Visits Stump Lake Refuge.--Warden Wesley D. Parker, of Sullys Hill Game Preserve, who also supervises Stump Lake Refuge, N. Dak., visited the latter place on February 10. A few spring holes were open on the lake and the ice was free of snow, but no water birds were there at that time.

Visiting the Washington Office.--Rudolph Dieffenbach, land valuation engineer, of the Winona Office, spent a couple of weeks in the Washington Office during March in connection with matters pertaining to the purchase of lands for the Upper Mississippi River Wild Life and Fish Refuge.

H. W. Terhune, of Juneau, Alaska, executive officer of the Alaska Game Commission, is visiting the Washington Office. He brought with him proposals of the Alaska Game Commission for changes in the regulations, which are being worked over and put into shape for submission to the Secretary. He is also taking up with the various divisions other matters relating to the work in Alaska.

Appointments and Resignation.--Misses Genevieve M. C. Schuberg, Lillian Gutzel, and Mary M. Maloney have been appointed stenographers in the Winona office. Otto M. Luttchens has been appointed deputy reservation ranger and U. S. deputy game warden on the Upper Mississippi River Refuge. Mrs. Irene B. Kinney, clerk-stenographer at the National Bison Range, Mont., resigned on February 29 to accept a position in Seattle, Wash. Mrs. Mary Sharp has been appointed to the position made vacant.

Sympathy of the Bureau is extended to Almer P. Nelson, warden of the Elk Refuge, in the death of his mother, which occurred at Jackson, Wyo., on March 2.

Ducks Remaining at Dungeness Spit.--Warden William E. Hubbard reported late in February that the ducks were scattered all over that country by the hundreds and did not seem to show any signs of leaving. This was unusual for that period of the year in that region. He stated that the days were warm but the nights extremely cold with heavy frosts, light breezes, and no heavy winds.

MIGRATORY-BIRD TREATY AND LACEY ACTS ADMINISTRATION

Finds Wild Fowl Plentiful in South.--Mr. Sheldon returned to Washington on February 29 from a trip through southern States, where he visited Memphis, Tenn., and, in company with the executive secretary of the American Wild Fowlers Association, inspected ducking grounds on the Mississippi River in the vicinity of Memphis. He also visited an estate in Saulsbury, Tenn., where a successful quail propagating project is being carried on. He then proceeded to Mobile, Ala., and spent several days with Warden W. H. Hoffman in the Mobile Bay region. Ducks were extremely plentiful, and a great many jacksnipe were observed in the wet meadowland around the upper area of Mobile Bay. Sportsmen and residents reported an exceptionally good shooting season, with both jacksnipe and woodcock present in greater numbers than for several preceding seasons. After leaving Mobile, Mr. Sheldon went to Savannah and inspected the Savannah River Bird Refuge in company with Warden E. B. Whitehead and Deputy Warden C. L. King.

Treaty-Act Regulations Amended.--Amendments to the migratory-bird treaty-act regulations, changing the classification of gallinules, the open season in a number of States, and the sinkbox regulation, have been adopted by the Secretary and approved by the President. Gallinules are no longer classified under the open season for wild ducks and geese, being now included in the open season for rails. In Illinois the season on waterfowl

will open on September 16 and close December 31, this being in lieu of the former period from October 1 to January 15. In Massachusetts the season on rails and gallinules (except coot) is changed from the period September 1-November 30 to the period September 16-December 15.

In South Carolina, Georgia, Florida, Alabama, and Mississippi the open season on mourning doves has been changed from the period October 16-January 31 to two periods covering the month of September and from November 20 to January 31.

The provision prohibiting the use of sinkboxes in strictly inland waters in the hunting of migratory waterfowl was not changed but the restriction having application to the distance between sinkboxes, and between sinkboxes and shore lines or islands, has been eliminated. Under the regulations of last season it was required that sinkboxes (batteries) used in the taking of waterfowl in coastal sounds and bays and other coastal waters be placed not less than 700 yards from the short line of the mainland at ordinary high tide and not less than 700 yards from any island at ordinary high tide and not less than 700 yards from any other sinkbox.

Visitors.--Dr. John C. Phillips, of Boston, Mass., with Charles Sheldon, of Washington, D. C., called in the Division on March 12. Doctor Phillips has just made a visit to some of the wild-fowl areas on the Mississippi River.

Observes Ducks Moving Northward.--Warden O. D. Steele, of Kansas City, Mo., reports that the first movement northward of waterfowl took place there on February 7. He states that an accurate record kept by a local observer gives the arrival of ducks in 1927 as February 23, and 1926 as February 17. The 1926 date was the observer's earliest recorded date, and this year that record was broken by 10 days. According to Warden Steele, these early ducks were not mated or mating, and were very wild and much like fall birds. He reports that on the morning of March 2 the lake at Lake City, Mo., presented a wonderful sight: There were "acres and acres of ducks and it appeared as if there was not room for another duck." At 8:30 a.m. they began to leave the lake in flocks of 200 to 500 to feed in the cornfields nearby. At noon the birds were still coming in from the south.

Rescue Man from Lake.--Warden W. H. Ransom aided in rescuing a man from probable death on February 12. He and another man, in the latter's launch, had been taking the waterfowl census in the Lake Pend d'Oreille region, Idaho, and when returning to Sandpoint, Idaho, about 8 p.m. they were met at the dock by several excited men who had heard frantic calls for help in the darkness on the lake. They went out on the lake again but were unable to locate anyone or any boat, and returned to the dock about 10 p.m. More reports of faint cries on the lake at Kootenai, Idaho, were received and the boat again hurriedly put out on the lake. By the aid of a guiding bonfire on the ice fringe along the shore, they located a man who had been one of a party of three in distress, but his two companions had drowned. Through first-aid treatment and giving him hot coffee, they succeeded in reviving him.

Injured.--Warden O. D. Steele slipped on the ice in a swamp near Beverly, Mo., on February 21 while on patrol duty, and in endeavoring to prevent himself from falling wrenched the muscles of his back, and as a consequence was laid up for five days.

Recovers from Flu.--Warden B. J. Shaver, of St. Paul, Minn., was ill during part of January and the greater part of February with the flu. During this time it was necessary for him to be in the hospital for treatment for three days. He was able to resume official duty on February 29.

Will Answer Questions of Hunters and Anglers.--Frank L. Earnshaw, of this Division, is to conduct a new column in Field and Stream under the heading "Department of Game and Fish Laws," beginning with the May issue of that magazine. As editor of the column, Mr. Earnshaw will each month answer questions from correspondents on matters of doubt regarding the game and fish laws of the country and discuss various legal phases of game and fish conservation. His many years' experience in compiling the game and fur publications of the Biological Survey unquestionably has given him a reservoir of information on game and fur legislation, both Federal and State, that should be valuable to him in his new undertaking.

Cases Terminated--Reports Received During February

<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Jans*	1	Illinois	Possessing bodies of insectivorous birds	\$10
Holland*, Pertuit**	1	Louisiana	Selling two ducks	3 months suspended jail sentence
Kelsey, Winne**	2	Florida	Killing ducks from a motor boat	\$10 each
Scholler*	1	Illinois	Hunting coots from a motor boat	\$10
Steele, R. C.	2	Washington	Possessing sandpipers	\$50 each

Cases Reported for Prosecution

<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Blackwell*, Taylor***	2	Illinois	Selling ducks
Charlton, Murphy***	2	Michigan	Selling ducks
Gieseler*, Startz***	1	Illinois	Killing ducks in close season
Kelsey, Saunders***	8	Florida	Hunting ducks from a motor boat
Roahen	1	Illinois	Hunting ducks from a motor boat
Roahen, Hess**	1	"	Killing ducks prior to half an hour before sunrise
Roahen, Huff**	2	"	Hunting ducks prior to half an hour before sunrise
Roahen, Scholler*	4	"	Possessing ducks in storage in close season
Riddick, McCall**	1	Oklahoma	Hunting ducks from a motor boat
Shaver, Beals***	5	Minnesota	Hunting ducks after sunset
Shaver, Vogel**, Stute**, Rogalla***	1	"	Selling ducks
Whitehead, Curl**	1	Georgia	Possessing wood ducks

* U. S. deputy game warden.

** State deputy game warden.

*** Cooperator or assistant.

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THE SURVEY

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GENERAL NOTES

Chief and Associate Chief in Field.--Mr. Redington left Washington on April 15 for an extended field trip and will be away from headquarters until late in the summer. His first stop was at Omaha, Nebr., where he attended the Sixth National Convention of the Izaak Walton League of America and gave an address on the subject "Wild Life Research and Our Waterfowl Situation." He then went directly to the conference of predatory-animal and rodent-control leaders at Ogden, Utah. From there he will go to San Francisco, Calif., and Portland, Oreg., and then to Seattle, Wash., where he will sail on May 5 for Juneau, Alaska. From Juneau he will go by regular steamer to Seward, where he will board the Seal, one of the sea-going boats of the Alaska Game Commission, for a trip westward along the Alaska Peninsula and thence into the Aleutian Islands probably as far as Umnak Island. He expects to make connection at either Unalaska or Akutan with a regular steamer to Nome, from where he will travel either by airplane or by boat up the Yukon River to Fairbanks. He will visit Circle and other points and return to the southern coast via the Richardson Trail. The trip as planned should result in obtaining some first-hand information regarding Alaskan matters in which the Survey is especially interested.

Mr. Henderson accompanied Mr. Redington to Omaha, to attend the Izaak Walton League Convention, and to the Ogden conference. On his way back to Washington he expects to visit the Wind Cave National Game Preserve in South Dakota, and Sullys Hill Game Preserve in North Dakota. He will return to Washington about the middle of May.

Stresses Need for Research in Wild-Life Administration.--In his address on April 20 before the annual meeting of the Izaak Walton League of America, at Omaha, Nebr., Mr. Redington stressed particularly "the need for research as an essentiality in wild-life administration." In referring to the work that the Biological Survey is doing or is planning to do along research lines, he mentioned our studies of the food habits of migratory birds, necessary "in order to permit us to appraise the food resources of areas available for refuges"; investigations in the propagation of migratory wild fowl; studies of conditions affecting herds of unrestrained elk and other big-game animals "to obtain information essential to their successful management and protection"; the country-wide census of waterfowl; the bird-banding operations both with game and nongame species; and the establishment of sanctuaries for birds, which "will do more," he said, "for their welfare than any other one thing." Mr. Redington sought to enlist the interest of the Izaak Walton League in problems confronting the Alaska Game Commission in its comparatively new work in the Territory. "Seldom," he said, "has such an opportunity been given to those interested in the perpetuation of our big-game animals to unite their efforts in the establishment of a well-balanced and effective game administration program as can be done in the Territory of Alaska, where such species as the Alaska brown bear, the moose, the mountain sheep, the goat, and the caribou are present still in comparatively large numbers. . ."

Conference of Field Leaders Held.--A conference of field leaders in predatory-animal and rodent-control work was held at Ogden, Utah, April 23 to 28 to discuss various problems affecting the work of the Bureau under these two projects in the field. The following members of the Washington office were present: Mr. Redington and his secretary, T. E. Jacoby, Mr. Henderson, Stanley P. Young, in charge of Economic Investigations, and James Silver, leader of the Eastern Rodent Control District. Further news of the conference will be reported in the May SURVEY.

Mammal Society Holds Interesting Session.-- The tenth annual meeting of the American Society of Mammalogists was held at the U. S. National Museum, Washington, D. C., April 10 to 14. Members of the Biological Survey took an active part on the program and presented papers as follows: "Summary of Available Evidence Bearing on the Migration of Whales," by Remington Kellogg; "Taming Wild Animals," by Vernon Bailey; "The Introduction of Mammals Foreign to a Region," by E. A. Goldman; "An Intensive Study of Damage by the Porcupine," by Dr. Walter P. Taylor; "Getting Public Support for Mammal Protection," by Ernest P. Walker; and "Progress and Problems in Mammalian Research," by Dr. W. B. Bell.

The first day of the sessions consisted of a symposium on whales under the arrangement of Mr. Kellogg. Another special feature in connection with the meeting was an exhibit of the work of American mammal artists under the arrangement of E. R. Kalmbach. Work of 30 artists was shown, including both paintings and drawings of living mammals and a group showing examples of modern technique in illustrating scientific papers on mammalogy. Among the artists represented was O. J. Murie, of the Biological Survey, who showed five of his watercolors. Another exhibit of small traps and trapping was arranged by Mr. Bailey.

All officers of the society were re-elected, including Dr. T. S. Palmer, vice-president; Dr. H. H. T. Jackson, editor; and A. Brazier Howell, corresponding secretary. On the final day of the meeting, April 14, members enjoyed a tour of the National Zoological Park, conducted personally by Dr. Wm. M. Mann, the director. Also, about 20 of the members were taken by Mr. and Mrs. Victor J. Evans to visit their Acclimation Park, located near Washington, where a large number of rare and interesting mammals and birds are kept for study and observation. Some rare parrots and pheasants, cranes and waterfowl, Mexican turkeys, and numerous other birds were seen, and in the mammal collection zebras, white-tailed gnus, and several varieties of African antelope, including a beautiful springbok in a large field where it has ample room to show off its remarkable powers of running and bounding into the air. Several forms of exotic deer were seen, and the beaver house, planned by Mr. Bailey for convenient study of the species, was inspected. The next meeting of the society will be held at Ann Arbor, Mich.

Relief Association Offers Insurance Benefits.-- E. J. Thompson, assistant in operations and member of the Governing Committee of the Government Employees Mutual Relief Association, furnishes the following information that should be of interest:

It is quite possible that some of the field men are not fully informed regarding the advantages to be derived from membership in the Government Employees Mutual Relief Association and to what extent this organization provides benefits not available under the U. S. Employees Compensation Act. The Compensation Act provides benefits only on account of injuries sustained while in the performance of Government business and of occupational diseases, such as pneumonia, rheumatism, and tuberculosis, that can be proved to have resulted from exposure while on official duty. Cases of occupational diseases are extremely difficult to prove, and not many such cases have been allowed by the U. S. Employees Compensation Commission.

The Government Mutual Relief Association provides compensation for loss of time without pay, medical, hospital, nursing, and other miscellaneous expenses, and death benefits, when relief is not afforded by Government or cooperative associations. Many such cases are presented to the Association and paid annually, and more than \$150,000 has been disbursed by the Association in benefits to its members since its organization.

At the low cost of \$12 a year, payable semiannually, which is the same rate charged from the organization of the Association in 1905, members are obtaining protection that may be of great assistance to them financially and that would cost them much more in commercial companies.

Doctor Nelson Convalescent.-- Dr. E. W. Nelson, who was ill for a time in a hospital in New Orleans, La., and later in Washington, has recovered sufficiently to be able to leave the hospital and return to his quarters at the Cosmos Club, but is not yet able to take up his regular work at the office.

Conservation Measures in Congress.-- The annual appropriation bill for the Department (H. R. 11577), which passed the House on March 3, was reported to the Senate and passed on March 29. The Senate added items in the bill in favor of the Biological Survey totaling \$110,480. These items are still pending, and the bill is now in the hands of the conferees of the two houses.

The migratory-bird conservation bill (S. 1271--Norbeck) passed the Senate on April 18. It was amended to eliminate the license features, and an authorization for an annual appropriation of \$1,000,000 was substituted to carry out its provisions. It was further amended to eliminate the public-shooting grounds features and the provision authorizing the payment of the salaries of United States game wardens for the enforcement of the migratory-bird treaty act and the Lacey Act. An amendment offered by Senator Caraway provides for turning over to the States the enforcement of the law and regulations on the reservations when adequate legislation therefor has been adopted by the States.

The Bear River Refuge bill (S. 3194--King), which passed the Senate on March 6, was amended in the House Committee on Agriculture by substituting the Colton bill (H. R. 10473) on the same subject. It passed the House on April 11, with two additional amendments, one limiting the amount that may be expended for the purchase of land to \$50,000, and the other providing that not less than 60 per cent of the area acquired should be maintained as an inviolate sanctuary for migratory birds. The House amendments were concurred in by the Senate on April 13, and the bill was approved by the President on April 23. It carries an authorization for an appropriation of \$350,000 to carry out the provisions of the act.

The resolution (H. J. Res. 215--Haugen) to accept 488 acres of land and improvements thereon located near McGregor, Iowa, from James D. Munn, of New York City, as an addition to the Upper Mississippi River Wild Life and Fish Refuge, passed the House on March 7, the Senate on April 4, and was approved by the President on April 10.

Another resolution that has an important bearing on the progress of the work of acquiring land for the Upper Mississippi Refuge (H. J. Res. 200--Andresen) passed the House on April 11 and was reported to the Senate on April 13. This resolution would increase from \$5 to \$10 an acre the average price that may be paid for land acquired for the Upper Mississippi Refuge. As originally designed, the resolution was intended to authorize payment for land on a contract basis, rather than the average price on the basis of actual purchases. The measure was amended by the House Committee and further amended in the House before its passage. According to the House Resolution there will be no change in existing procedure except that the average price that may be paid for future land is increased from \$5 to \$10 an acre.

The resolution (S. J. Res. 111--McNary), authorizing the acceptance of the donation of two islands in the Columbia River, Walla Walla County, Wash., from the Northern Pacific Railroad as an addition to the Columbia River Bird Refuge, passed the Senate April 4. A similar resolution (H. J. Res. 235--Haugen) has been the subject of a favorable report by the Department to the House Committee on Agriculture.

The bill (S. 3439--Norbeck) authorizing the acquisition of a herd of musk-oxen for experimental purposes in Alaska at a cost of not to exceed \$25,000 was favorably reported to the Senate on March 30 and passed on April 4. This bill, together with the similar House bill (H. R. 334--Sutherland), is still pending in the House Committee on Agriculture.

The bill (H. R. 15--Leavitt) authorizing an appropriation of \$150,000 for the purchase of lands to be added to the Absaroka and Gallatin National Forests in Montana for the purpose of extending the winter range of elk and other big game in the Yellowstone National Park, passed the House on April 2. The bill (H. R. 478--Winter) for the acquisition of lands to be added to the Elk Refuge at Jackson Hole, Wyo., and carrying an authorization for an appropriation of \$275,000 for this purpose, has been reconsidered by the Director of the Bureau of the Budget and approved to the extent of an authorized appropriation of \$150,000, provided a similar amount is raised by States, counties, organizations, and individuals and turned over to the Federal Government for the purposes of the act. The matter has been placed before the House Committee on Agriculture by the Department. The revised forestry research bill (S. 3556--McNary) has been favorably reported to the Senate; and the companion bill (H. R. 12878--McSweeney) was introduced in the House on April 10.

The bill to establish game refuges on the Ouachita National Forest (H. R. 8130--Reed of Arkansas) was reported to the House on April 11.

Manuscripts for Outside Publications and Addresses have been submitted as follows:

Bailey, Vernon, "Taming Wild Animals."
 Earnshaw, Frank L. "Game and Fish Laws."
 Goldman, E. A. "The Fluctuation of Game in Numbers."
 Jackson, Hartley, H. T. "Review of Ashbrook's 'Fur-Farming for Profit'."
 McAtee, W. L. "Game for Our Drier Half."
 Murie, Olaus J. "Spotted Sandpiper Escapes a Hawk" and "Ee-ah Finds the Refuge."
 Oberholser, Harry C. "February and March Birds about Washington, D. C."
 Palm, Bessie, W. "Birds That Have Made Lindbergh Flights" and "How to Know Some of Our Common Ducks."
 Sheldon, H. P. "The Witless Woodcock" and "Woodcock Shooting 'In Those Days'."
 Walker, Ernest P. "Getting Public Support for Mammal Protection."

New Publication.--The following publication of the Bureau was issued on March 16:

"Hints on the Care of Ferrets," Bi-128 revised (multigraphed).

BIOLOGICAL INVESTIGATIONS

Oberholser on Waterfowl Census Work.--Dr. H. C. Oberholser has recently returned from a trip through the Southwestern and Pacific Coast States in the interest of the waterfowl-census work. He visited southern Alabama, southern Louisiana, southern Texas, New Mexico, southern Arizona, California, western Oregon, and western Washington. The chief purposes of his trip were to make contacts with field men of the Biological Survey, State game and conservation commissions, sportsmen's organizations, individual sportsmen, and ornithologists, and to examine as many of the waterfowl areas in those parts of the United States as his time permitted. He visited the delta of the Mississippi River, the sanctuaries along the Louisiana coast, and the property of the Orange Cameron Company in southwestern Louisiana. He also made a trip along the coast of Texas from Galveston to Corpus Christi in the boats of the State Game Commission. In New Mexico and Arizona several of the important waterfowl areas were visited. The Salton Sea and other areas in southern and central California were examined, as well as several in western Oregon and Washington, including the Puget Sound region. In all the States visited he received a cordial cooperation that will greatly facilitate the carrying out of the waterfowl census project. All the members of the Biological Survey field force were very helpful. Doctor Oberholser reports that the organization of the waterfowl census is progressing rapidly and satisfactorily, and that the results already being received are of great value.

Bird-Banding Activity Growing.--The bird-banding work continues to grow so rapidly that it is becoming a serious problem to care properly for the natural increase in these activities with the funds and personnel available. The number of cooperators now on the list is 1,347. Every possible care is used in selecting these, and it is not enough for a person merely to indicate an interest in the work. Each applicant for a banding permit must be at least 18 years of age and must satisfy the Survey that he will operate a trapping station and that he has sufficient knowledge of birds to identify accurately those that he may trap for banding. This knowledge must be vouched for by an ornithologist or an instructor in zoology. The article by Doctor Nelson on bird banding that appeared in a recent number of the National Geographic Magazine has been primarily responsible for the recent increase in the number of cooperators. About 250 applications for banding permits were received as a result of this paper.

During the present fiscal year the Survey has purchased and issued about 140,000 bands, while the number of birds banded by cooperators during this period is about 93,000. In addition to these, there have been received about 2,400 return records, while the schedules that are daily received contain many more important returns that have not yet been transferred to the card file.

Doctor Taylor Returns to the West.-- The visit of Dr. W. P. Taylor, who for the past several years has been stationed at Tucson, Ariz., was mutually beneficial to the Bureau and to him. During the three weeks he was in Washington he was able to put the finishing work on certain reports and to discuss with the Chief and other members of the Survey a number of current and prospective projects. On the evening of April 7, Doctor Taylor addressed the Biological Society of Washington on "The Biology of Forest and Range," his talk being illustrated with lantern slides. He returned to Tucson on April 14.

Seed Tests Show Discouraging Results.-- The work of Theo. H. Scheffer on the relation of moles and rodents to agriculture and horticulture has included experiments in treating seed of various kinds with some substance that will deter burrowing rodents and other pests from destroying it in the ground. These tests have so far met with discouraging results. Poor germination was the rule. Mr. Scheffer plans to make other tests under various conditions.

Howell Visits North Carolina.-- A. H. Howell left Washington on April 16 to spend a few weeks in making a preliminary survey of the relations of animals of various groups to the forests of western North Carolina. The present trip is in the nature of a reconnaissance that should develop methods of approach in attacking this complicated problem. He will be stationed at the Appalachian Forest Experiment Station at Asheville, N.C.

A. S. M. Members Visit Mammal Collection Offices.--Among those in attendance at the recent meeting of the American Society of Mammalogists the following devoted some time to research or conference in the Division's laboratories in the museum: Dr. W. H. Osgood and Colin C. Sanborn, of the Field Museum of Natural History; Dr. L. R. Dice, Adolph Murie, and Robert M. Bradley, of the University of Michigan Museum of Zoology; R. H. Santens and J. Kenneth Doult, of the Carnegie Museum of Pittsburgh; Dr. R. M. Anderson, of the National Museum of Canada; W. Kenneth Cuyler, of the Cleveland Museum of Natural History; Dr. Glover M. Allen, of the Museum of Comparative Zoology; Dr. C. C. Adams, of the New York State Museum; George H. H. Tate, of the American Museum of Natural History; Dr. H. H. Lane, of the University of Kansas; Wm. J. Hamilton, Jr., of Cornell University; Dr. Francis Harper, of the Boston Society of Natural History; Prof. A. R. Shadle, of the University of Buffalo; E. T. Seton, of Greenwich, Conn.; and Wm. P. Harris, Jr., of Detroit, Mich.

Films Elk.--O. J. Murie, during the latter part of March, was successful in getting motion pictures of elk on and about the Elk Refuge at Jackson, Wyo. These are being developed, and it is hoped will prove a valuable addition to our working data.

Completes Caribou Report.--Mr. Murie has recently completed and turned in a voluminous report covering his work on the caribou of Alaska. His studies covered nearly three and a half years, during which he visited at all seasons nearly every section where caribou continue to exist in numbers. The value of such a study has many applications. It is the first attempt to get first-hand a comprehensive view of the life habits, including the migrations, of Alaska's most notable wild game animal, a subject concerning which much has been written, but always from limited viewpoints. The desirability of crossing the larger forms of caribou with the imported reindeer, in order to increase the size of the stock, was also one of the objects of this study.

Essay Contest Brings Requests for Material on Wild Life.--An offer of prizes for essays on the value of the wild life of Virginia, and methods of increasing the supply, has resulted in the receipt of a large number of requests from high-school students and teachers for pertinent material. This movement, which is sponsored by the Virginia commission of game and inland fisheries, should result in the stimulation of much helpful interest among the children of the State, and similar efforts might well be inaugurated in other States where wild life is decreasing. A full realization on the part of the rising generation of the causes of any decrease in our wild-life resources is of the utmost importance. Such studies should result in a more thorough acquaintance with the numerous species that have marked economic or esthetic value, and should help to bring about sound methods of management backed by public sentiment.

Lighthouse Perches Save Birds from Sea.--An Associated Press dispatch from London in a recent issue of the New York Herald Tribune states that the Royal Society for the Protection of Birds has become a "tourist agency for the bird world." "As the time for spring migration approaches, the society has taken steps to aid the little travelers and make their air journeys as comfortable as possible. With this end in view, large perches or bird rests have been erected around the tops of various lighthouses which are in the birds' favorite flying route around the British Isles. The bright beams of the lighthouses were held responsible for the death of tens of thousands of birds annually. *** The same beams now point the way to a haven of rest. The perches are of wood on iron supports, being arranged in rows around the dome and the base of the lamp. Feed boxes are also provided. ***Willow warblers, thrushes, blackcaps, larks, and nightingales, according to reports of the society, suffered the heaviest losses on their yearly adventurous travels, as these birds fly at low altitudes ***."

Arranges Trap Exhibit.-- An exhibit of traps useful in collecting specimens of mammals for museum purposes and others for taking animals alive for study or propagation, shown at the U. S. National Museum during the recent meeting of the American Society of Mammalogists, aroused considerable interest. Vernon Bailey gathered the traps from various sources. They included his trap for taking beavers alive, many forms of simple tin-can and bottle contrivances, traps for taking squirrels and muskrats alive, and many suitable for collecting specimens of the small mammals. The old cyclone trap was of special interest to mammalogists, as it was the first practical trap invented for collecting small mammals in this country and was widely used in the field from about 1888 to 1900. A number of types of cages for keeping small mammals in captivity for study were also shown with their occupants.

Studies Chipmunks.-- Mrs. A. A. Allen, of Ithaca, N. Y., studied chipmunks in the Biological Survey mammal collection on April 10 and 11.

ECONOMIC INVESTIGATIONS

Addresses Club.--Mr. Young on April 16, at Collier's Inn, addressed the Triangle Club of the U. S. Department of Agriculture, on "Methods of Predatory Animal Control Used by United States Government Hunters." About 80 members of the various bureaus of the Department were present.

Sheep Killed by Dogs in Ohio.-- The Bureau has recently learned that the State of Ohio has paid out \$767,900.10 for sheep killed by dogs. Of this amount \$340,466.69 was paid out in the fiscal year 1926, and \$427,433.41 in 1927. Evidently the depredations by sheep-killing dogs on the flocks of Ohio stockmen are just as severe as those experienced by some of the western livestock producers.

Ground-Squirrel Infestation Heavy in Washington.--L. K. Couch, leader of rodent control in the Washington district, reports that a heavy infestation of Townsend ground squirrels was noted early in February in northern Columbia and Garfield, eastern Adams, and western Whitman Counties, comprising the immediate Snake River region. Preparations were made for an extensive poison campaign in this area. About 2,600 pounds of grain were prepared in Adams County; 540 in Benton County; 960 in Garfield County; and 2,300 in Whitman County. Field tests were arranged in several localities to arouse interest. The Union Pacific Railroad officials agreed to poison their entire right-of-way through the infested district. From present indications, the southeast district will use many more tons of poison grain than last year. Plans were worked out for conducting ground-squirrel work in the northern counties as soon as the animals appear. The spring being about average, March and April will see concerted poisoning throughout the infested district.

Mountain Lions Taken in Arizona.--M. E. Musgrave, leader of predatory-animal control in the Arizona district, reports that Hunter Larsen recently had rather an exciting time with a mountain lion. The animal apparently was very fat and full of good beef. It jumped out of a tree and the dogs caught it on the ground. Hunter Larsen has a little wire-haired terrier that has caught many lions for him, and naturally he is quite fond of it. In some way the lion got the terrier, and the hounds piled onto the lion so thick that Hunter Larsen could not shoot it. With a heavy hunting knife he waded into the fight. One of the thrusts proved disastrous to Larsen as he struck a bone, cutting his hand deeply as it slipped down over the shield. Between Larsen and the dogs, however, the lion was dispatched before it had a chance to kill the little dog.

Mr. Musgrave also reports that Hunter M. G. Gusman took three lions in the district north of Phoenix. Gusman killed an old female lion and then back-trailed her to her bed. There he found two small kittens, which were brought into Phoenix and fed on a bottle. They were later turned over to the State game warden for an exhibit.

Digger Ground Squirrels Increase Rapidly.--Joseph Keyes, leader of rodent control in the California district, reports a remarkable case showing how fast the digger ground squirrel is capable of reproducing. A female ground squirrel shot in Santa Barbara County by F. E. Garlough, of the Eradication Methods Laboratory, showed upon examination 17 unborn young, the embryos being perfectly formed and about the size of peas. This is the greatest number recorded by anyone in the California district. The average number reported by Mr. Garlough in his day's collecting was 11. This helps to explain why the digger ground squirrel continues to exist in such large numbers and emphasizes the necessity for "follow-up" operations before or during the breeding season. Fortunately, the use of thallium is furnishing the needed poison for this purpose.

Effective Ground-Squirrel Campaign in California.--Mr. Keyes also reports that observations made by Mr. Garlough on some 35,000 acres of strychnine-treated land in Merced and Santa Clara Counties, Calif., revealed the startling effect of the strychnine operations as conducted by trained crews under the supervision of the Bureau. The kill there was more than 99 per cent, and the remarkable fact is that the area is still holding up. At one time estivation was believed to have accounted for some of the disappearance of the digger ground squirrels, but it is doubtful if this was greater than 1 per cent. This is one of the largest areas to be covered in a single operation, and only a "once-over" was required to produce these remarkable results. The work was done during July, August, and September, 1927. A "follow-up" with thallium is now planned, and it is believed that this will result in an area practically free from ground squirrels. An idea of the infestation will be gained when it is stated that over 35 tons of poison grain were used in the initial poisoning.

Rats Exterminated in Wibaux and Miles City, Mont.--O. E. Stephl, leader of rodent control in the Montana district, reports that no rats occur in Wibaux or Miles City. He further states that no rats are found in any town in Montana on the Northern Pacific Railroad from the North Dakota line to the Idaho line.

Rodent-Control Campaigns Under Way in South Dakota.--Louis Knowles, leader of rodent control in the South Dakota district, reports that the organization of field work for the control of Richardson, striped, and Franklin ground squirrels, and pocket gophers, together with experimental rat-control work, formed the major activities in that State during March. This work was confined to the northeastern counties of the State and was all in the range of the Richardson ground squirrel, except that the pocket-gopher control operations were in Lawrence County.

Pocket-Gopher Control Resumed on Nebraska National Forest.--Mr. Knowles reports that pocket-gopher control work has been resumed on the Bessy Division of the Nebraska National Forest under the leadership of Clyde Licking. Mr. Licking with the help of two laborers poisoned 2,000 acres of pine plantations that had been treated in the fall of 1927 and by the end of the month had the work under way on plantations that had not been previously treated through poisoning operations. During the last week of March, Mr. Knowles visited the area and examined much of the 5,000 acres that had been poisoned during the fall of 1927. Wheat bait was used in that operation, and the infestation had been heavy. The examination indicated that fully 90 per cent of the pocket gophers that were on the areas when poisoning was first undertaken had been killed by the fall operations. Examination of the 2,000 acres poisoned by Foreman Licking revealed that there was not to exceed one per cent of the number of active pocket gophers there on March 30 that there were on October 1, 1927.

Gives Bird Talks in Schools.--I. N. Gabrielson, leader of rodent control in the Oregon district, during the latter part of March gave talks at all the schools in Astoria on the value of birds in controlling insect and rodent pests. These talks were well received both by students and teachers, and the school officials seemed well pleased with the results. In addition, one rodent-control meeting with an attendance of 25 farmers was held in Clatsop County. The total attendance in the county during the week was 2,340.

Three Mountain Lions Taken in One Day.--L. L. Laythe, leader of predatory-animal control in the Colorado district, reports that Hunter Clem J. Biggs, working in the San Juan district, made an enviable record during the month in taking three full-grown mountain lions in one day. This is not the greatest number of lions taken by a Government hunter in any one day, but it is a record in that Hunter Biggs in taking the lions made three different runs during the day.

FOOD HABITS RESEARCH

Bird-Attracting Equipment Doubled at Bell Station.--Provisions have been made for a renewal of experiments at the United States Plant Field Station at Bell, Md., in connection with the increase of bird life as a factor in the control of the chestnut weevil. Nearly 100 nest boxes, in addition to drinking and bathing facilities, have been provided on a 10-acre plot. This equipment nearly doubles that provided for the past two years.

Leaf-tyer in Florida Less Numerous This Year.--Reports from Francis M. Uhler in Florida are to the effect that the celery leaf-tyer is by no means so abundant as last year and that there are no such concentrations of birds preying upon it as were then observed.

FUR RESOURCES

Whelping Season on at Fur-Animal Station.--Dr. Karl B. Hanson reports that the whelping season for foxes at the Fur-Animal Experiment Station at Saratoga Springs, N. Y., is in full swing and that by the end of the month 10 vixens will have whelped young.

Talks Over Radio.-- Since the establishment of the U. S. Rabbit Experiment Station, at Fontana, Calif., D. Monroe Green has been requested on a number of occasions to talk over the radio on rabbit raising. On April 9 he spoke over Station KFI, at Los Angeles, concerning the extent and development of rabbit raising in the United States and more particularly in California.

Returns from University of Minnesota.-- Dr. J. E. Shillinger has completed his temporary assignment at the University of Minnesota and has returned to the Washington office. En route from Minneapolis he visited fox farms in Wisconsin and the University of Wisconsin, at Madison, to confer with scientists on matters pertaining to the pathology of foxes and to obtain information concerning their findings in recent epizootics of fox diseases they have studied. Dr. Shillinger also visited Detroit, Mich., to confer with the secretary of the American Veterinary Medical Association regarding the publications of results of findings in the study of fox diseases.

Getting an Appropriation.--"We went before that Committee (Agricultural appropriations) armed with credentials from twenty-one organizations and backed up by twelve or more Congressmen, and asked that the appropriation for the Division of Fur Resources of the Bureau of Biological Survey be increased from \$38,800 to \$62,000, an increase of \$23,200. After listening to our fourteen thousand words of wisdom, the Committee gave us an increase of \$7,500, which is over fifty cents a word. If we had known the rate in advance, we could, just as well as not, have spoken forty-two thousand words, but while we admit that our own stuff is worth only half a dollar a word, we thought that Congressional courtesy would rate the product of Mr. Swing, Mr. Kading, Mr. Goodwin, Mr. Carso, Mr. Selvig, Mr. Fort, Senator Shipstead and others at two dollars at least." --David C. Mills (Director National Association of the Fur Industry) in The Fur Journal for March, 1928.

Called Home.--Miss Elsie Galloway spent two weeks during the month at her home in Trezevant, Tenn., where she was summoned on account of the serious illness of her father.

GAME AND BIRD RESERVATIONS

New Refuge Established.--By Executive order of April 3, 1928, the Upper Klamath Wild Life Refuge, Oreg., was reserved and set aside for the use of the Department of Agriculture as a refuge and breeding ground for birds and wild animals. It is located near the upper end of Upper Klamath Lake and embraces about 5,200 acres, consisting principally of marshland, with a dense growth of tules and other marsh vegetation, affording excellent cover for the breeding waterfowl of the region. The establishment of this refuge is especially important in view of the fact that Lower Klamath Lake has been so extensively drained, with the result that the great marshes, formerly including in the neighborhood of 80,000 acres, are for the most part no longer available for the birds.

Conditions at Elk Refuge.--Almer P. Nelson, warden of the Elk Refuge, Wyo., reports that the night of March 1 was the coldest experienced there during the winter; the thermometer registered 27 degrees below zero. From March 11 to 24 the days were warm, and much of the snow on the refuge and surrounding lands melted, leaving a large area free of snow. The elk from the feeding grounds, therefore, scattered out over the pasture lands and near-by foothills, where they found considerable forage available, and the quantity of hay fed to the elk on the feeding grounds was reduced accordingly. Beginning with March 24, there were seven days of stormy weather and about a foot of snow fell, which caused the elk to gather on the feeding grounds again. By March 31, however, the weather had turned warmer with a south wind, and the snow melted fast.

April, 1928

Hay Shortage Likely at Elk Refuge.--During the winter of 1925-26 no feeding of hay was necessary at the Elk Refuge, and for several years preceding the winter of 1926-27 the feeding required only a limited tonnage. About 3,000 tons, however, were required in 1926-27, and more than 3,000 tons during the winter season just ended. The limited requirements had resulted in an accumulation of hay by the Federal Government and the State that permitted the heavy feeding necessary during the past two winters. The accumulated stock of hay on hand, however, has now been exhausted. It is estimated that the forage production from the Elk Refuge during the coming summer will not exceed 1,400 tons. If heavy feeding should be necessary again next winter, well over 3,000 tons will be needed, and it now appears that there is likely to be a shortage of 1,500 to 1,800 tons, unless this can be made up from other sources.

Deer and Moose Captured in Wyoming.--About seven years ago there were only about 40 mule deer that wintered near the Black Rock Ranger Station, which is about 50 miles northeast of the Elk Refuge and within the Teton National Forest. Since then an increasing number of deer have appeared there each winter and, at the end of March, approximately 300 of the animals were near the Station. It is reported also that there are more deer in the Gros Ventre region, as well as in other parts of Jackson Valley, than for many years. Of the seven deer recently captured by the State near Elk, Wyo., and transferred to the Elk Refuge, two are to be shipped to Memphis, Tenn., and two to Lincoln Park, Chicago, Ill.; the three remaining are to be held for the present at the Elk Refuge. As stated in last month's SURVEY, it was at first planned to ship the deer to Kentucky. In addition to the deer, the State captured three moose near Moran, Wyo., which were also transferred to the Refuge and are being held there for shipment with the deer to the same destinations.

Spring Feeding of Buffalo Begins at Bison Range.-- Spring feeding, as a measure to improve forage conditions on the National Bison Range, Mont., began on March 21, when Warden Frank H. Rose and an assistant corralled about 400 buffalo. Grass on the range at that time was just starting to grow, and had attained a stage reached a year ago by March 1. There was still considerable snow on parts of the Range. The buffalo will be fed until about June 1 or until the seed stalks of the fescues are well toward maturity. Considerable reductions have been made in the herds of buffalo and elk during the winter and, with early spring feeding of the buffalo an improvement this year in the condition of the range is anticipated.

Warden Rose gave a talk to the Women's Club at Ronan, Mont., on the evening of March 28.

Antelope at Sullys Hill Doing Well.---The nine antelope at Sullys Hill Game Preserve, N. Dak., including the seven young ones that were brought last summer and raised on the bottle, are doing well. The young antelope are still fed whole oats twice a day, and are almost as large as the two mature ones at this preserve.

Birds Return to Sullys Hill.---On the evening of March 17, a flock of blackbirds were heard singing in a marsh near the picnic grounds at Sullys Hill Preserve for the first time this spring. On March 22, the first Canada geese of the season were seen flying north; and the following day many flocks of mallards, a few meadowlarks, one robin, and some sparrows were seen--the first of their species to arrive this season. Many hawks have come to the preserve. A number of goldeneyes have been seen on the small lake within the area occupied by the preserve, and a few of these birds were seen on Devils Lake, bordering the reservation on the north. After a week of cold weather early in April, many of the water birds disappeared, and the lakes were again frozen over.

Hares Scarce at Sullys Hill.---Varying hares are scarce at Sullys Hill Game Preserve and on other local timbered areas. Three of these hares were found dead recently in the woods. It is believed that they died from a disease that has killed off many other hares in that locality.

Many Birds at Lake Malheur, Oreg., and Vicinity.---Many pintail ducks are at Lake Malheur Reservation. Warden George M. Benson visited Burns, Oreg., recently to check up on the number of snow geese in that locality. He saw thousands of these birds feeding in the meadows near the road leading to Burns. Mr. Benson states that there have been fewer ravens there this spring than for several years, probably because every hunter and rancher in the vicinity is aiding in the campaign for the control of the birds.

Waterfowl Leave North Platte.---There were about 2,000 ducks (mallards and pintails) on the lake at North Platte Bird Reservation, Nebr., during March. They began their northern flight on March 20. Seventy-five geese were at the refuge the first of March but left several weeks later, and no other geese have been seen there since.

Large Flight of Ducks at Belle Fourche.---The largest flight of pintail ducks seen in that locality in four or five years began to arrive at Belle Fourche Bird Reservation, S. Dak., on March 4. Few Canada geese have been seen at this refuge.

Ducks and Grouse Scarce at Conconully.---Conconully Bird Reservation, Wash., was clear of ice on March 31, and the first bluebirds to arrive this year were seen on that date. Ducks and ruffed grouse are scarcer at Conconully this spring than they have been in several years.

Ducks and Gulls at Nine Pipe.---Warden Rose reports that he saw about 1,000 ducks, principally mergansers, mallards, and goldeneyes, and some large gulls when he visited Nine Pipe Bird Reservation, Mont., recently.

Hérons, Cormorants, and Pelicans Nesting on Indian Key.---Warden Harold P. Bennett, of Indian Key Bird Reservation, Fla., states that many birds, mostly herons, are building their nests on the refuge. He observed the snowy heron, the American egret, the Florida blue and Louisiana herons, as well as cormorants and pelicans, building nests. Ibises were seen but not in large numbers.

Personnel.---H. W. Terhune, executive officer of the Alaska Game Commission, who spent most of March in the Washington office, has returned to Alaska. Miss Natalie C. Waters, who was appointed temporarily on March 19 as typist in this division, has been transferred to the Migratory Bird Treaty and Lacey Acts Division. H. H. Hoyt, assistant warden of the National Bison Range, who was detailed to act as warden of Niobrara Reservation, Nebr., in the absence of Warden Fred M. Dille during the winter, has now been detailed to Wind Cave Game Preserve, S. Dak., to assist Warden A. P. Chambers in the construction of a new game fence, which will inclose an additional area in the game preserve. Mr. Dille has returned to his duties at Niobrara Reservation. Homer F. Hall and Secger Stevenson have been appointed deputy reservation rangers and U. S. deputy game wardens at the Upper Mississippi River Wild Life Refuge. Elmer L. McDowell has been appointed patrolman on the same refuge.

Visitors.---Major H. F. Stone, formerly in charge of this division, visited the Washington office during the month, Smith Riley, also formerly in charge of the division, has been visiting the Elk Refuge, Wyo.

New Hunting and Trapping Regulations Issued For Alaska.---Revised regulations respecting game animals, land fur-bearing animals, game birds, non-game birds, and nests and eggs of birds in Alaska were adopted by Acting Secretary Dunlap on March 28. Important changes from existing regulations include the reestablishing of the close season on beavers throughout the Territory after the open seasons permitted during the spring of 1928. Slight changes have been made in the seasons for trapping muskrats in Fur District 3 and in the drainage of the Tanana River in Fur District 2. The scarcity of minks in certain portions of Fur District 3 has necessitated closing the season on these valuable fur-bearers. The increase in numbers of black bears in the northern portion of Fur District 2 and the habit of these animals of killing moose and caribou calves have led to a removal of the protection afforded by the present close season. The increasing popularity of the Alaskan big-game hunting fields and the signs of depletion of the big brown and grizzly bears have necessitated a reduction in the bag limit from 3 to 2 on the Kenai and Alaska Peninsulas and the Kodiak-Afognak Islands group.

The nonresident bag limit of caribou has been limited to 2 throughout the Territory. Formerly a bag limit of 3 mountain sheep was permitted a non-resident north of the Arctic Circle; this is reduced to 2, thereby making the bag limit uniform in all districts. The few moose remaining on the Alaska Peninsula south and west of the Kvichak River, Iliamna Lake, and the old Kamishak-Kakhonak Bay Portage are given complete protection by the discontinuance of the former open season in that area. The Alaska Game Commission at its annual meeting at Juneau in February adopted revised regulations relating to guides, poisons, and resident trapping licenses, essentially the same as the old, with the exception that the requirements of applicants for guide licenses are made more stringent.

IMPORTATIONS

Birds Imported from Three Countries.--Among the more interesting birds imported during the month were two Mahali weavers from Africa, four hyacinthine macaws (Anodorhynchus hyacinthus) from Brazil, and 180 bamboo partridges from Shanghai, China.

Quail Importations.--The total number of quail imported this season from Mexico at the three ports of Brownsville, Laredo, and Eagle Pass, Tex., up to April 7 was 68,586.

MIGRATORY-BIRD TREATY AND LACEY ACTS ADMINISTRATION

Ducks Killed by Phosphorus.--On April 4 the Survey received four wild ducks that had been found dead not far from the Susquehanna Flats, Md. Investigation showed that these birds had been killed by phosphorus poisoning, the first ducks reported so killed in this section for more than a year. It appears that the guard, which the War Department maintained over the area containing phosphorus, was removed on March 1, and that a large flock of canvasbacks then settled on the area and a number were killed by the phosphorus. The matter was promptly taken up with the Commanding Officer of the Aberdeen Proving Grounds with a view to having the guard replaced. An interesting thing in connection with the examination of two of the ducks is that particles of gold also were found in their stomachs.

Geese Plentiful at Cayuga Lake.--Warden P. S. Farnham reported under date of March 24 that there had been more Canada geese about Cayuga Lake, N. Y., this spring than had ever been known before, and more were arriving every day.

Great Flocks of Waterfowl Seen in Nebraska.--Warden J. Q. Holmes reports that he and Warden O. D. Steele, in company with State Warden Lytle, saw thousands of blue and snow geese on March 15 while on a patrol trip from Omaha, Nebr., north to points along the Missouri River as far as Tekamah and Arizona, Nebr. Mr. Holmes states that he saw more of these geese than he had ever seen before and that it seemed as if all the ducks and geese in the world were migrating through that section.

Mercer Verdict Reversed.--The verdict of a jury in Corporation Court at Norfolk, Va., which resulted in former State Game Warden Floyd Mercer being sentenced to 10 years in the penitentiary in connection with the killing of two game-law violators in Princess Anne County, Va., was reversed by the Supreme Court of Appeals at Richmond, Va., on March 22, and the case was remanded for further proceedings. This case, together with those against Federal Game Warden W. L. Birsch and former Deputy State Game Warden John T. Capps, was set for trial at Norfolk on April 25.

"Motor Boats and Wild Ducks" is the title of an article by W. R. Dillon in the May issue of the magazine Motorboating. In it are recited some of the trials and tribulations of the Federal game wardens, and details are given of the types of some of the motor boats used by the Survey in the enforcement of the migratory-bird treaty act and on the Upper Mississippi River Wild Life and Fish Refuge.

Plovers Numerous in Texas.--Warden Frank Clarkson writes that conditions are ideal this year for plovers in southeastern Texas, and he believes the larger part of the flight is stopping in his section, as he has seen more upland plovers this spring than since he was a boy.

Ill.--At this writing Warden T. T. Bloxsom is very ill and under the care of a nurse at his home in Locustville, Va.

Injured.--Warden G. E. Mushbach was injured on March 9 when the oar with which he was pushing a boat slipped off a tree, causing him to fall on a gasoline can in the bottom of the boat. It was thought for some time that his ribs were broken, but an X-ray failed to disclose a fracture, although the injury has been proving very painful and causing him considerable inconvenience.

Gives Course in Fish and Game.--According to a press release issued by the California Fish and Game Commission, the close relationship between forests and fish and game, in fact all of the wild life of California, was the theme of a six-lecture fish and game course recently given to a forestry class at the University of California by Dr. H. C. Bryant, head of the Bureau of Education of the Commission, who also serves as one of the Biological Survey's inspectors of foreign birds and mammals at the port of San Francisco. In his lectures, which covered a three-week period, he stressed the importance of fish and game and its conservation, its importance to forestry, and the interrelations of forests and wild life. The importance of the forests as a refuge for the fish and game as well as the birds and animals not in the game class, and the valuable work done by these birds and animals in seed distribution and destruction of damaging insect life was clearly explained in the lectures. Reports to the Commission from the university indicate that the students were enthusiastic regarding the series, and Doctor Bryant has been highly complimented for his clear and efficient method of presenting the message of fish and game conservation and protection.

Game-Law Violators Receive Maximum Penalty.--Charged with killing wild ducks from a motor boat on the St. Francis River, Mo., on November 22 and 26, 1926, two residents of that State were found guilty in Federal court at Cape Girardeau, Mo., on April 9, 1928, and each fined \$500, the maximum amount prescribed for a violation of the Federal game law, in addition to costs of \$63.26 each. These cases were vigorously contested by the counsel for the defendants, but the prosecution by the Government was admirably presented by the United States attorney and his assistant. The jury deliberated nearly four hours before returning a verdict of guilty.

Two other cases of more than passing interest were terminated in the Police Court of the District of Columbia on April 10, 1928. Both the defendants, one a fish and game dealer and the other a produce dealer in a local market, were charged with selling a number of wild ducks. Both men entered pleas of guilty and paid fines of \$300 each, together with costs.

Four persons from the Reelfoot Lake section of Tennessee, charges with selling wild ducks, were arraigned in Federal court at Jackson, Tenn., on March 26. One offender was fined \$25, two \$75 each, and the other after being tried and found guilty received a sentence of 40 days in jail. Another duck seller from the same district, arraigned on March 29, 1928, was also fined \$75.

Counts Swans on Susquehanna Flats.--At the request of the Survey, State Game Warden E. Lee LeCompte, of Maryland, estimated the number of whistling swans on the Susquehanna Flats, at the head of Chesapeake Bay, on March 22. Counting the large bunches as carefully as possible, he conservatively estimated that there were not less than 16,000 swans present.

Cases Terminated--Reports Received During March

<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Barmeier, Adams*	2	Missouri	Killing ducks from a motor boat	\$500 each and costs of \$63.26 each
Barmeier, Mrovka*, Ferrier*	2	"	Killing ducks in close season	\$25 each
Clarkson	1	Texas	Killing doves in close season	\$10
Creighton*	2	District of Columbia	Selling ducks	\$300 each and costs
Ehlers*, Corbin**, Creceilius**				
Rothfrock**, Kain**	2	Indiana	Killing ducks in close season	\$25 each
Goodwin*	1	Massachusetts	Killing two yellowlegs	\$5
Harris*, Rison**	1	Arkansas	Selling ducks	\$20
Linebaugh, Hammond*	1	Tennessee	Selling ducks	Jury trial, 40 days in jail
" "	1	"	Selling ducks	\$25
" "	3	"	Selling ducks	\$75 each
Mestel*	2	Illinois	Killing killdeer	\$25 each
Pierce*	7	New Jersey	Hunting ducks after sunset	\$10 each
Riddick, McCall**	1	Oklahoma	Hunting ducks from a motor boat	\$10
Riddick, Priest**	3	"	Hunting ducks from a motor boat	\$10 each
Roahen, Huff**	1	Illinois	Hunting ducks prior to half an hour before sunrise	\$5
Smith	2	Maine	Possessing eider ducks	\$10 each
Steele	1	Washington	Possessing ducks in storage in close season	\$25
Whitehead	2	Florida	Killing doves in close season	\$5 each

* U. S. Deputy Game Warden

** Deputy State Game Warden.

Cases Reported for Prosecution

<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Bloxsom, Ruark**, Kelley**	3	Maryland	Possessing trapped ducks
Bunney*, Ling**	5	Nebraska	Killing ducks in close season
Chappell*, Riddick	3	Arkansas	Killing ducks in close season
Clarkson, Adams*, Mrovka*	1	Missouri	Killing ducks in close season
Creighton*	1	District of Columbia	Killing a duck in close season
Harris*, Rison**	1	Arkansas	Selling ducks
Kelsey, Saunders***	15	Florida	Hunting ducks from a motor boat
Kelsey, Winne**	2	"	Hunting ducks from a motor boat
Linebaugh, Hammond*	1	Tennessee	Selling ducks
Perry, Fontaine**	2	Mississippi	Killing robins
" "	1	"	Possessing a robin
Riddick, Priest**	3	Oklahoma	Hunting ducks from a motor boat
Roahen	1	Iowa	Possessing ducks in storage in close season
"	1	Illinois	Killing a duck in close season
"	1	"	Hunting ducks in close season
Roahen, Lee**, Hess**	3	"	Hunting ducks prior to half an hour before sunrise
Roahen, Huff**, Lee**, Hess**	3	"	Hunting ducks prior to half an hour before sunrise
Roahen, Hess**, Huff**	3	"	Hunting ducks prior to half an hour before sunrise
Shaver, Beals*, Hope**	5	Wisconsin	Hunting ducks after sunset
Stadlmeir, Pierce*	1	New Jersey	Hunting ducks from a motor boat
Steele, Schroer*, Huhn**	1	Missouri	Hunting ducks in close season
Whitehead, Saye*, Clark**	1	Georgia	Exceeding bag limit on doves
Whitehead, Smith**	3	South Carolina	Hunting ducks from a motor boat

* U. S. Deputy Game Warden.

** Deputy State Game Warden.

*** Assistant or Cooperator.

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UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF BIOLOGICAL SURVEY

CONFIDENTIAL SUPPLEMENT TO THE SURVEY
For Assistants in Charge of Field Offices

No. 1

May 14, 1928.

1. PURPOSE OF CONFIDENTIAL SUPPLEMENTS.--Confidential Supplements to THE SURVEY will be mailed to field offices of the Bureau as often as necessary, usually at least once a month, to communicate information of general Bureau interest along lines not yet available or appropriate for inclusion in THE SURVEY. These Supplements may take the place of certain general memoranda, but will not affect the issuance by heads of divisions of memoranda to their field men.

Most items in the Supplements will have been discussed in the Tuesday morning meetings of the Bureau staff, but such other administrative announcements may be inserted from time to time as may be directed by the Chief or the Acting Chief of the Bureau. At the weekly staff meetings, reports are made by Washington members, or by such field men as may be temporarily in Washington, on the condition of projects originating within the Survey, or among its cooperators, or in State organizations or legislative bodies. The essentials of such reports as may be of interest or of use to field offices in the various States will appear in the Confidential Supplements.

The function of the Confidential Supplements is to keep field offices informed on important matters as promptly as desirable. The function of THE SURVEY is chiefly to provide an informal organ for communicating timely information not of a confidential or regulatory nature.

Administrative information contained in the Confidential Supplements must be strictly limited to Washington and field offices of the Biological Survey.

2. REORGANIZATION OF RESERVATIONS WORK.--With a view to preventing what is seen to be a tendency toward an overlapping of activities, and to weld two related lines of work into one, Mr. Redington, after a careful study of the situation, has recommended to the Secretary that the Division of Game and Bird Reservations be consolidated with the Division of Migratory-Bird Treaty and Lacey Acts Administration, and the recommendation has been approved, to become effective on July 1 next. The change it is believed will better correlate the work of the Bureau and be in the interests of efficiency and economy, particularly in connection with the development of refuges and reservations for migratory birds. Major Goldman, now in charge of the Reservations Division, will be engaged on scientific research work, for which his many years of experience on problems and investigations of the Survey highly qualify him. Colonel Sheldon will be in charge of the combined division.

3. REORGANIZATION OF ECONOMIC INVESTIGATIONS.--The following personnel changes will become effective on July 1:

W. E. Crouch, now in charge of rodent-control work in Idaho, will be transferred to Washington as assistant to Mr. Young, in charge of the Division of Economic Investigations, and will be succeeded as State Leader of Rodent Control in Idaho by T. B. Murray, who has been his assistant. Mr. Murray's assistant will be announced later.

S. E. Piper, who is in charge of the Eradication Methods Laboratory, Denver, Colo., will be assigned to the Division of Biological Investigations and will be succeeded by F. E. Garlough, who has been on the investigative staff of the laboratory at Berkeley, Calif. The place made vacant by Mr. Garlough will be filled by the transfer of E. E. Horn, who has been engaged on similar work for the laboratory in the Southwest. It is planned to broaden the work of the Laboratory and to add to the staff of investigators.

Charles J. Bayer, who for many years has been in charge of predatory animal control operations in Wyoming, has resigned to enter private work. He will be succeeded by Albert M. Day, who has been in charge of rodent control in the State, and the two lines of work in Wyoming will now be under one head.

More detailed reference to these changes will appear in the next issue of THE SURVEY.

4. AGRICULTURAL APPROPRIATIONS.--Final agreement of the conferees on the Agricultural Appropriation Bill for the Fiscal Year 1929 was reached on May 10. Referring to Bureau memorandum of April 12, page 3, the following changes have been made:

Item 3: The increase for "Food Habits of Birds and Other Animals" has been reduced from \$89,500 to \$82,000, omitting \$7,500 that was to have been used in fur-animal investigations.

Item 5: The increase for "Protection of Migratory Birds" has been reduced from \$17,000 to \$5,000, omitting \$12,000 that was to have been used for investigating the status of the woodcock.

The total appropriation, therefore, is \$1,165,500 in the regular appropriation, and a \$12,000 re-appropriated balance from the fiscal year 1927, making a grand total for the Bureau of \$1,177,500. This is an actual increase of \$160,480 over the current year.

The following proviso also has been added to the bill:

"That the Secretary of Agriculture shall investigate and report to the next regular session of Congress as to the feasibility of a five-year cooperative program, or a program extending over such term of years as to him shall seem most advisable for the purposes in view, for the eradication, suppression, or bringing under control of predatory animals within the United States, and the estimated cost thereof as compared to the present method."

5. PROPOSED STUDIES OF RABBIT DISEASES.--Tentative arrangements are being made with the Dean of the College of Agriculture of the University of California for a cooperative study of the nutrition and diseases of domestic rabbits at the Rabbit Experiment Station at Fontana. Conferences on the subject have been held by Mr. Redington and Mr. Green with A. B. Miller, President of the Fontana Farms Co., and Dr. E. D. Merrill, Dean of the College. Plans are being developed for the employment of a veterinarian to work on problems of hygiene and disease in rabbit culture.

6. STUDY OF GOVERNMENT PUBLICATIONS.--The Bureau of Efficiency has sent a questionnaire to all Departments to determine whether improvements can be made in the publication situation, and it is hoped that the outcome may be more prompt publication of reports after completion. Attention was devoted to executive approvals, revisions of mailing lists, promotion of sales, delays in publication when manuscripts are ready, and funds needed to make publication work current.

7. OUTSIDE PUBLICATIONS.--In a recent memorandum regarding manuscripts for outside publication, Mr. Redington stated that "the personal views of the men of the Bureau are their own, and I do not care to put any unreasonable restraint on their activities in making public their personal opinions on the various subjects with which they deal, many of which are controversial in nature; but I do believe that in the presentation of such manuscripts the official title of the author should be left off."

W. P. Sheldon

H. P. Sheldon,
Acting Chief.

THE SURVEY

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UNITED STATES DEPARTMENT OF AGRICULTURE

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No. 5

FROM THE CHIEF

Juneau, Alaska

May 9, 1928

A year ago to-day it was my privilege to become Chief of the Biological Survey. The year has been an interesting and profitable one to me. I am proud of the Bureau and its personnel, to whom I extend all good wishes.

Paul G. Redington

GENERAL NOTES

Chief in Alaska.--After attending the conference of predatory-animal and rodent control leaders at Ogden, Utah, Mr. Redington spent a few days at San Francisco, Calif., and Portland, Oreg., and then sailed for Juneau, Alaska. With H. W. Terhune, the Bureau's representative on the Alaska Game Commission, he is making an extended trip through the Territory in an effort to gain first-hand information regarding game conditions, the reindeer situation, and many other matters in which the Survey is concerned.

Returns from West.--Mr. Henderson returned to Washington on May 19 from his field trip in Western States. After the termination of the Ogden conference, he went with Mr. Young to Laramie, Wyo., to confer with officials of the State Extension Service in regard to the future handling of the predatory-animal work in the State, which has been placed under the direction of A. M. Day. He then went to the Wind Cave National Game Preserve, S. Dak., and inspected the new fence that is being constructed there, and discussed with Warden Chambers various matters relating to the administration of the refuge. At Sullys Hill Game Preserve, N. Dak., he spent two days going over various matters with Warden Parker. Mr. Henderson also visited the Upper Mississippi River Wild Life and Fish Refuge and traveled its entire length on the new boat Wood Duck, and was thus able to get a good idea of the lands that are to be included in the refuge. He discussed matters of acquisition with Superintendent Cox, Rudolph Dieffenbach, and Stanley B. Hall. At St. Paul, Minn., he called on Dr. R. G. Green, of the University of Minnesota, with whom the Survey is cooperating in the study of fox diseases, and on State Game and Fish Commissioner J. F. Gould, and visited the Lake States Forest Experiment Station to discuss matters in which the Bureau is interested.

Resigns as Head of Game Protective Association.--John B. Burnham, chairman of the Migratory-Bird Treaty-Act Advisory Board, has resigned as president of the American Game Protective Association after 17 years as head of that organization. In 1911, after serving as deputy commissioner of the New York State Department of Conservation, he assisted in organizing the Game Protective Association, and was made its first president. Mr. Burnham has been continuously active in conservation work, especially in the support of Federal conservation measures, such as the migratory-bird treaty and the treaty act, the new Alaska game law, and the Upper Mississippi River Wild Life and Fish Refuge Act. His resignation as president of the association was accepted with regret and reluctance by the Board of Directors, and only at the earnest request of Mr. Burnham, who desired to have more time to devote to his personal interests. He will not cease to be active, however, in the affairs of the association and in conservation measures generally. Carlos Avery, nationally known conservationist, who has been connected for a number of years with the American Game Protective Association, more recently as its secretary and as editor of American Game, the official bulletin of the organization, has been chosen to fill the position of president thus made vacant for the first time.

The annual appropriation bill for the Department of Agriculture (H. R. 11577) was approved by the President on May 16. Differences in the bill as passed by the House and the Senate were smoothed out in conference, and in it the Biological Survey lost two items inserted by the Senate--one for woodcock investigations, \$12,000; and one for further investigations of fur resources, \$7,500. The total appropriation for the Biological Survey was \$1,177,500, an increase of \$160,480 over last year. The conferees on the part of the House proposed a further amendment, which was agreed to, as follows: "That the Secretary of Agriculture shall investigate and report to the next regular session of Congress as to the feasibility of a five-year cooperative program or a program extending over such term of years as to him shall seem most advisable for the purposes in view, for the eradication, suppression, and bringing under control of predatory animals within the United States, and the estimated cost thereof as compared to the present method."

The following tabulation shows the appropriation figures for the current year and for fiscal year 1929, with the increases where made:

Appropriation items	Fiscal Year 1928	Increase	Fiscal Year 1929
General administration	\$67,020	\$1,480	\$68,500
Game and bird reservations (the \$45,000 increase including an item of \$18,000 for construction of fencing on Wind Cave Game Preserve, S. Dak., which is not continued for 1929, thus making an apparent increase of only \$27,000)	72,000	45,000	99,000
Food habits of birds and other animals (funds for Divisions of Economic Investigations, Food Habits Research, Fur Resources, and Biological Investigations, the increase including \$12,000 reappropriated from 1927)	568,000	94,000	662,000
Biological investigations	40,000	5,000	45,000
Protection of migratory birds (funds for Divisions of Migratory Bird Treaty and Lacey Acts Administration, Biological Investigations, and Food Habits Research) . . .	158,000	5,000	163,000
Reindeer and Alaska game and fur animals . .	100,000	----	100,000
Upper Mississippi River Wild Life Refuge . .	30,000	10,000	40,000
Grand totals . .	1,035,020	160,480	1,177,500

Conservation Measures in Congress.--To carry out the provisions of the Bear River Refuge Act, approved April 23 (Public--No. 304), an item of \$200,000 was incorporated in the second deficiency bill (H. R. 13873), and this provision of the bill has passed the House and Senate without amendment.

The resolution (H. J. Res. 200) to increase the price that may be paid for land in the Upper Mississippi River Wild Life and Fish Refuge from \$5 to \$10 an acre passed the Senate on May 8 and was approved by the President on May 12 (Public Res.--No. 42).

The forest research bill (S. 3556--McNary), which is of interest to the Survey, was approved by the President on May 22. The bill (H. R. 15--Leavitt) authorizing an appropriation of \$150,000 for the purchase of lands to be added to the Absaroka and Gallatin National Forests in Montana for the purpose of extending the winter range of elk and other big game in the Yellowstone National Park, passed the Senate on May 10 and was approved by the President on May 18.

The Cheyenne Bottoms Migratory Bird Refuge Bill (H. R. 7361--S. 4153) was found by the Bureau of the Budget to be in conflict with the financial program "at this time".

A hearing was held before the House Committee on Agriculture on May 14 on the Aswell-Broussard bill (H. R. 12735--S. 4139) to establish the Northwest Louisiana game refuge, which was attended by Mr. Sheldon, representing the Survey, and Stanley P. Arthur, representing the Department of Conservation of Louisiana. Mr. Sheldon also made a short statement on the bill (H. R. 12576--Fulmer) to establish the South Carolina migratory-bird refuge.

A new bill (H. R. 13615--Haugen; S. 4393--McNary), introduced on May 8 at the request of the Department, would confer additional police powers on employees of the Department of Agriculture in the enforcement of regulatory laws that do not ^{now} carry such powers and would afford protection to Federal employees against assault and intimidation in the discharge of their duties under the various laws. This bill is of great importance to the Survey, as it would confer police powers in connection with the enforcement of Section 84 of the Penal Code protecting wild animals and birds on National bird reservations and would authorize arrests and seizures in connection with violations of the Lacey Act; it would also include within its provisions the wardens of the Survey engaged in the enforcement of the migratory-bird treaty and Lacey Acts and the special act relating to reservations.

The so-called Welch salary bill (H. R. 6518--Welch; S. 4269--Smoot) as modified in conference and finally passed eliminates the seventh step restored to the various grades by Senate amendment. No definite ruling has yet been made upon the effect of the provisions of the bill.

All other bills that have been commented upon from time to time in THE SURVEY are still pending in committee.

Visitors.--Dr. Nagamichi Kuroda, of Akasaka, Tokyo, secretary of the Ornithological Society of Japan, was a visitor at offices of the Bureau on May 1.

Lincoln Ellsworth, distinguished explorer and aviator, visited the Bureau recently. He is especially interested in the small band of antelope that was placed on Grand Canyon National Park in 1924 and gave some interesting information regarding them obtained during a visit there last year.

William H. Wright, of Newport, Wash., author of outstanding books on the grizzly and black bears, visited the Survey on May 18 and 19. Mr. Wright passed his early years in New England and later pioneered to the region of the Upper Mississippi. For many years he traveled extensively in the West and became well acquainted with its wild life. Formerly an ardent sportsman, he has in later years forsaken the rifle for the camera and is enthusiastic in his advocacy for all conservation activities.

Dr. Melvin R. Gilmore, for a number of years connected with the Heye Foundation, of New York City, an organization engaged in the study of the American Indian, visited offices of the Bureau on May 19 and 21. Doctor Gilmore's intimate knowledge of the habits, language, and food plants of the Indians of the Missouri region has been of great assistance in the Bureau's studies of its fauna and flora.

Stanton Warburton, Jr., of Tacoma, Wash., visited the Bureau about the middle of May.

Re-elected.--At the annual election of officers of the Biological Society of Washington on May 5, E. A. Goldman was re-elected president, Dr. H. H. T. Jackson a vice president, and Frederick C. Lincoln treasurer.

Official Publications.--The following official publications of the Bureau were issued during the month:

- "Poisonous Snakes of the United States," Bi-571, revised (mimeographed), 15 p. Received May 22.
- "Laws and Regulations Relating to Game, Land Fur-Bearing Animals, and Birds in Alaska" (1928-29), Alaska Game Commission Circular No. 5, 30 p. Received May 23.
- "Wild Birds Introduced or Transplanted in North America," by Dr. John C. Phillips. Technical Bulletin No. 61, 64 p. Received May 29.

Outside Publications:--Instead of listing manuscripts submitted for outside publication, articles will hereafter be cited with complete reference after they have actually been published. This method not only will be of greater use to the personnel but also will reduce the correspondence of authors who have been requested to furnish separates of articles not yet published. Citations will be made as promptly as the "outside publication" cards (Bi-755) are received. The following articles appearing in outside publications have been reported during the month:

- Ashbrook, Frank G. "Recommendations to Beginners in Fur Farming." The Northern Fur Trade, vol. 3, no. 3, p. 14-16, 18. March, 1928. Published also in the Fur Farmer Magazine, vol. 4, no. 9, p. 9, 21, 30, 32, May, 1928; Black Fox Magazine, vol. 12, no. 3, p. 3-4, 78, 80, April, 1928; and Fur Journal, vol. 2, no. 4, p. 26, 34-37, April, 1928.
- and Karl B. Hanson. "Progress Report of Marten Breeding Experiments." American Fox and Fur Farmer, vol. 7, no. 4, p. 116, 18, 20. April, 1928.
- and H. J. McMullen. "Fur-bearing Animals of the United States: The Rabbit." Fur Journal, vol. 2, no. 4, p. 30, 40-42. April, 1928.
- Denmead, Talbott. "The Timberdoodle." National Sportsman, vol. 49, p. 14, illus. June, 1928.
- ". "The Maryland Fish Situation." Maryland Conservationist, vol. 5, no. 2, p. 10. Spring Issue, 1928.
- Dillon, W. R. "Motor Boats Protect Wild Fowl." Motor Boating, vol. 41, no. 5, p. 18, 19, 130, illus. May, 1928.
- Earnshaw, Frank L. "Game and Fish Laws." Field and Stream, vol. 33, no. 1. p. 72-75. May, 1928.
- Gabrielson, Ira N. "Impudence and Impertinence Squirrelified." Oregon Business, vol. 6, no. 8, p. 7, 17. April, 1928.
- ". "Rock Gardening in Oregon." Better Flowers, vol. 8, no. 5, p. 9, 16, May, 1928.
- ". "Forest Fire and Wild Life." Four L Lumber News, vol. 10, no. 13, p. 32. May, 1928.
- Goldman, E. A. "The Kaibab or White-tailed Squirrel." Journal of Mammalogy, vol. 9, no. 2, p. 127-129, illus. May, 1928.
- Jackson, H. H. T. "Review of Ashbrook's 'Fur-Farming for Profit'" and "Review of Moseley's 'Our Wild Animals'." Journal of Mammalogy, vol. 9, no. 2, p. 157 and 159, respectively. May, 1928.
- Kellogg, Remington. "Review of Weigelt's 'Rezente Wirbeltierleichen und ihre Paläobiologische Bedeutung'." Journal of Mammalogy, vol. 9, no. 2, p. 159-160. May, 1928.

- McAtee, W. L., and J. R. Malloch. "A New Bicolored Species of Megaris (Pentatomidae)." *Proceedings Entomological Society Washington*, vol. 30, no. 3, p. 46. March, 1928.
- Mills, Ernest M. "Moles and Their Control." *Rural New Yorker*, vol. 87, p. 739, illus. May 12, 1928.
- Moore, A. W. "Zapus princeps princeps in Utah." *Journal of Mammalogy*, vol. 9, no. 2, p. 154-155. May, 1928.
- Oman, A. E. "The Vanishing Prairie Dog." *Agricultural Leaders Digest*, vol. 9, no. 2, p. 46. April, 1928.
- Redington, Paul G. "Wild Life Research and Our Waterfowl Situation." *The American Field*, vol. 109, no. 17, p. 411-412. April 28, 1928.
- Silver, James. "Pilot Blacksnake Feeding on the Big Brown Bat." *Journal of Mammalogy*, vol. 9, no. 2, p. 149. May, 1928.
- "Woodchuck Control in the Eastern States." *Fur Journal*, vol. 2, no. 4, p. 43-44. April, 1928.
- Stoddard, Herbert L. "The Cooperative Quail Investigation." (Va.) *Game and Fish Conservationist*, vol. 7, no. 6, p. 152-154. March-April, 1928.
- "Water Requirements of the Bobwhite Quail." *American Game*, vol. 17, no. 3, p. 45, 48. April-May, 1928.
- Young, Stanley P., and (Arthur H. Carhart). "The Queen Wolf." *Red Book Magazine*, vol. 51, no. 2, p. 80-83, 121-124, illus. June, 1928.

BIOLOGICAL INVESTIGATIONS

Addresses Biology Students.--Doctor Bell gave a talk on mammals before the Biology Class at Central High School, Washington, D. C., on May 23.

Census Work Continues with Good Results.--In the waterfowl-census work attention is now being devoted chiefly to the improvement of the organization. Effort is being made to obtain competent observers in all the important waterfowl areas that are not yet covered. This is a necessary feature of the investigation, since the more nearly complete the reports from waterfowl concentration areas, the more valuable will be the information gained from the whole project.

At present, in addition to naturalists, sportsmen, and numerous organizations, the various State game commissions are cooperating cordially, as are also the following Federal organizations: the Bureau of Lighthouses and the Bureau of Fisheries, of the Department of Commerce; the Bureau of Education, the Bureau of Reclamation, the National Park Service, and the Office of Indian Affairs, of the Department of the Interior; the Forest Service and Extension Service, of the Department of Agriculture; the Coast Guard, of the Treasury Department; and the Office of the Chief of Engineers, of the War Department. Arrangements have likewise been made for the full cooperation of the Canadian authorities through the Canadian Parks Branch of the Interior Department of Canada.

Reports to the number of 11,000 have been received from observers during the nine months since August, 1927, when the first monthly census was taken. These reports contain much valuable information regarding the numbers of waterfowl and the distribution and movements of the bulk of these birds during this period.

Waterfowl Almost Gone from Potomac.--The April waterfowl-census on the Potomac River below Washington was taken by Dr. H. C. Oberholser on April 7. The result showed that the ducks had largely moved out of this region for the north. Only about 12,800 birds were seen, of which more than 12,000 were lesser scaup ducks. The only other species observed were the hooded merganser, mallard, black duck, greater scaup, and American coot.

Continues Study of Rodent Damage to Bulbs.--Theo. H. Scheffer was mainly concerned during April on his studies of the damage to bulbs by pocket gophers and other rodents. In furtherance of this project he attended a two-day meeting of the Northwestern Bulb Growers Association at Tacoma, Wash., and inspected certain field plots at Corvallis, where pertinent problems are being studied by the Oregon State College, and at several other points. Both the large species (Thomomys bulbivorus) and the smaller species were involved. Other activities pursued included studies of the breeding of Columbia ground squirrels and some preliminary investigations of the efforts of orchardists to colonize bats for the control of the codling moth. These studies will be continued and special efforts made to ascertain the relation of the native bats to the codling moth.

Studies Growth of Teeth.--Dr. Henry H. Donaldson, of the Wistar Institute of Biology, Philadelphia, spent May 3 studying tooth growth as exhibited by specimens of bears in the museum laboratories of the Division.

Visitors.--Mr. and Mrs. John Borden, big-game hunters and explorers, of Chicago, Ill., visited the museum offices May 15 and examined specimens of sheep, moose, and bears. On the same day Harold L. Madison, acting director of the Cleveland Museum of Natural History, conferred with Dr. H. H. T. Jackson in regard to museum methods and other matters.

Attends Science Meeting.--Dr. W. P. Taylor, after his return to Tucson, Ariz., from Washington, attended the sessions of the Southwestern Division of the American Association for the Advancement of Science, held at Flagstaff, Ariz., April 22 to 26. A special feature was the symposium on "Forestry in the Southwest," in connection with which he presented a paper on the procupine. The meeting gave an excellent opportunity for conferences with workers in various fields concerning the work of the Survey. A field trip to the Painted Desert near Tuba City, where outstanding geological, archaeological, and biological phenomena are in evidence, was a feature of special interest by reason of the abrupt transition from the luxuriant vegetation of the San Francisco peaks to the conditions of the desert. Doctor Taylor was elected vice-president of the Southwestern Division.

Inspects Pine-Mice Damage.--Vernon Bailey visited an apple orchard near Burnt Mills, Md., late in April to study the damage inflicted by pine mice. He found an orchard of old trees that had suffered injuries for many years and that during the past winter had been girdled so badly as to necessitate bridge grafting. He was able to demonstrate the practicability of trapping, especially by the use of cans and jars imbedded in the soil so that they formed pitfalls.

Deer Mortality Found Due to Starvation.--Early in May Mr. Bailey visited central Pennsylvania to study the conditions responsible for the death of large numbers of deer during the past winter. This mortality was found to be due to starvation of the younger animals, owing to excessive numbers and consequent depletion of the forage.

Reports Conditions on Elk Refuge.--April in Jackson Hole, Wyo., was characterized by a tardiness on the part of spring to gain the ascendancy. O. J. Murie reports that the elk spent much time in the swamp, with the result that all the growth of the previous year was destroyed. There was the usual late-spring mortality of diseased animals. A number of elk, mule deer, and moose captured for shipment to various outside points developed disease conditions while being held at the refuge, and most of them died there or while en route to their destinations. The possibility of these animals having been infected by disease from the elk is suspected.

ECONOMIC INVESTIGATIONS

Ogden Conference To Mean Increased Efficiency, Says Chief.--"Cooperation" seemed to be the keynote of the conference on predatory-animal and rodent control at Ogden, Utah, where leaders of the Division of Economic Investigations gathered at the Hotel Bigelow during the week of April 23 to 28 to discuss the many problems of their work. Commenting on the conference, Mr. Redington said:

"Seldom has it been my pleasure to attend a conference of field workers where the spirit of cooperation was so manifest as at Ogden, where altogether 52 members of the Survey sat down to figure out the solutions of many of the difficult problems confronting the work of the Division of Economic Investigations. All the men got into the harness when it came to speaking their minds, and while the discussion waxed eloquent at times and was very frank in nature, nothing appeared in the nature of acrimonious argument, and the temper of the men was such that they were apparently able to come to an agreement on practically all the issues thrashed out.

"The recommendations of the conference covered a wide scope and when put into action will, I am sure, work rapidly for increased efficiency. All of us in the Survey who are connected with this particular line of work will now be able to talk the same language, and I feel sure that many issues heretofore of a highly controversial nature, which were not understood by our men, and certainly not by the public, will be so clarified as to make easier going in the future.

"I want to take this occasion to pay my respects to the men who attended the conference for their broad-minded points of view and to express my appreciation of the masterful way in which they handled the subjects assigned them."

At the banquet held in the Hotel Bigelow at the conclusion of the field conference the following resolution, which had been unanimously adopted Wednesday, April 25, following the conclusion of the reading of the conference papers, was presented to Mr. Redington:

"Whereas, the Division of Economic Investigations of the Bureau of Biological Survey is now in convention assembled for the first time since Paul G. Redington and Stanley P. Young have been in their respective positions; and Whereas, it is the wish of the Predatory-Animal and Rodent Control Leaders to assure our administrative officials of our united support and loyalty; Therefore, be it resolved, That we, the personnel of the Division of Economic Investigations in executive session assembled at Ogden, Utah, this 25th day of April, 1928, do hereby give Paul G. Redington, Chief, Walter C. Henderson, Associate Chief, and Stanley P. Young, in Charge of Economic Investigations, a unanimous vote of confidence, and that we hereby pledge them our united support. We wish further to assure our administrative officials that we will do all within our power to extend the work of the Bureau in an efficient and economical manner."

A full report of the conference in mimeographed form will be sent to the various field offices of the Division as soon as completed.

Conference Statistics.--Figures compiled at the Ogden conference showed that the 52 men attending had been in the public service an aggregate of 638 years. Their service in the Biological Survey, principally in predatory-animal and rodent control work, totalled 504 years, or a little more than 9 1-2 years for each man. The longest period of service with the Survey was 25 years, by Stanley E. Piper.

Personnel Changes Effective July 1.--Mr. Redington has announced the following changes in the Division of Economic Investigations to become effective on July 1:

W. E. Crouch, now in charge of the rodent-control work in Idaho, will be transferred to the Washington office as assistant to Mr. Young. Mr. Crouch has been with the Survey since 1916, first as assistant in the rodent work in Montana and Idaho, and in 1917 as leader in Idaho. His 12 years' experience in the field, it is felt, have well fitted him for his new assignment. Thomas B. Murray, who has been assistant to Mr. Crouch, will take charge of the rodent-control work in Idaho. Mr. Murray was first appointed as field assistant in the State in 1918. He soon after resigned to take up other work but returned to the service in 1922. He will be assisted by Paul T. Quick, now associate biological aid in the Idaho office.

Stanley E. Piper, in charge of the Eradication Methods Laboratory at Denver Colo., will be assigned to scientific research work in the Division of Biological Investigations in the field. Mr. Piper has had almost 25 years of continuous service with the Bureau, having first been appointed as field assistant in rodent-control operations on January 1, 1904. In 1908 he was in charge of the Survey's work in the Nevada mouse plague, and for several years had general supervision of both the predatory-animal and rodent-control operations in the Western States. He was placed in charge of the Eradication Methods Laboratory when this project was started in 1920. F. E. Garlough, of Berkeley, Calif., who is on the investigational staff of the laboratory, will succeed Mr. Piper. Mr. Garlough has been with the Survey since 1917, and has had much experience in rodent control in Oregon, Nevada, and California, and is well equipped to direct the research work at the laboratory. E. E. Horn, also a member of the laboratory staff, who has been working on the rodent-control problems of the Southwest, will be assigned to similar work in California, taking the place made vacant by Mr. Garlough's assignment to Denver.

Charles J. Bayer, who for many years has been in charge of the predatory-animal control work in Wyoming, has resigned to enter private business. Mr. Bayer came to the Biological Survey from the Forest Service in 1915 and during his term as leader has been very successful in developing the predatory-animal control work in Wyoming and in enlisting the interest of State officials and stockmen and obtaining their cooperation. During the period of his services in Wyoming, Mr. Bayer has been largely instrumental in bringing the gray wolf under control in that State, and has likewise directed effective work in reducing losses from coyotes, particularly in the sheep industry. The best wishes of the Bureau go forward to Mr. Bayer in his new line of endeavor. He will be succeeded by Albert M. Day, who since 1920 has handled the rodent-control activities in Wyoming. The two lines of work will now be under one head.

Oklahoma and Arkansas to Cooperate in Control Work.--Following the close of the conference at Ogden, Utah, Mr. Young visited field offices at Laramie, Wyo., Portland, Oreg., Olympia, Wash., Bozeman and Billings, Mont., and Denver, Colo. In returning to Washington he stopped at Oklahoma City, Okla., and Little Rock, Ark., where he conferred with the State game and fish commissions pertaining to cooperative predatory-animal work in these two States. It was learned that both Oklahoma and Arkansas are anxious to cooperate with the Biological Survey, and as a result cooperative funds in excess of \$20,000 will be forthcoming from Oklahoma and Arkansas by July 1, and it is planned to inaugurate organized predatory-animal work in these States similar to that conducted by the Bureau in the so-called Range States.

Cougars Taken in Oregon.--Stanley G. Jewett, leader of predatory-animal control in the Oregon district, reports that Hunter Elmer Miller recently took an adult female and two young cougars in Curry County, Oreg., and that Hunter H. Stokes captured an adult male cougar in Josephine County shortly after it had killed a deer, as evidenced by a large tuft of deer hair in its claws.

Rabies in Nevada.--E. R. Sans, leader of predatory-animal and rodent-control work in the Nevada district, reports that Hunter Leo Weilmunster, working last month in the northern part of Washoe County, killed a rabid coyote near his camp and a rabid bobcat in the center of a band of sheep. Another coyote taken near Gerlach, Nev., and examined by the State Department of Veterinary Science also proved positive for rabies.

Badger Destroys Coyote Pups.--C. J. Bayer, leader of predatory-animal control in the Wyoming district, recently reported that Hunter Del Dearth, of Kemmerer, Wyo., had trapped an old female coyote that was suckling young. He attached a drag to her neck and let her return to the den, which she reached a couple of days afterwards. Hunter Dearth arrived shortly after the coyote did only to find that a badger had taken nine pups from the den, eaten off their heads, and departed. Consequently he was unable to make other record of the pups because they had no scalps.

A Wise Coyote.--According to G. E. Holman, leader of predatory-animal control in the Utah district, Hunter W. R. Hale had an interesting experience while den hunting on the salt-grass flats between Salt Lake and Saltair during April. Mr. Hale trailed a coyote to a den, and then thinking that the old coyotes had escaped, set a number of traps to catch them before he disturbed the pups. After watching the den for five days, he decided that the older animals were not coming back, so he proceeded to dig out the pups. To his surprise he found the old female in the den, where she had remained during the entire time rather than come out over the traps set at the mouth.

Wolves Caught in Texas.--C. R. Landon, leader of predatory-animal control in the Texas district, reports that Hunter John Berry caught two well-known wolves and one coyote on a ranch about 15 miles north of Sabinal, Tex. These wolves are credited as responsible for heavy losses in that neighborhood during the past year. One of them had cut off its foot and escaped from the trap, but Hunter Berry and the owner of the ranch took the trail with some hounds and finally caught it.

Coyotes Kill Grouse.--Reports from hunters in the South Dakota district show that five coyotes taken during the month had last fed on nesting grouse, according to Louis Knowles, leader of predatory-animal and rodent control in the State. In a letter to Mr. Knowles an official of the Pine Ridge Indian Reservation says: "The coyotes are what get our grouse and pheasants in this country, and the only way to have game is to keep them down. About Christmas time there was a bunch of about sixty grouse working in a cornfield west of the agency, and I jumped them last Sunday and there are not more than twenty left; coyotes have done most of it if not all." Assistant Leader W. B. Elley, of South Dakota, reports that grouse are dying in considerable numbers from disease in Jackson and Jones Counties.

Experiments in Poisoning Pocket Gophers.--Mr. Knowles reports that experiments were carried on in Nebraska during the month with a view to finding the length of time that poisoned grain baits will remain palatable to the pocket gopher and retain a sufficient quantity of strychnine to insure a kill after being placed in the ground. The grains used were whole wheat and steamed rolled oats. Under April weather conditions both baits were found effective and palatable from seven to eight days. At the end of that time germination and growth of the wheat destroyed its effectiveness as a bait, and the rolled oats became moldy and unpalatable. Both baits seem to have been freely taken by the pocket gophers.

Jack Rabbits Dying Off.--E. R. Sans, leader of rodent control in the Nevada district, reports that in a recent trip through northern Washoe County he found that jack rabbits in certain localities have died off until rarely one is seen where a year ago they were eating half the crops. In the Massacre Lake district Mr. Sans counted as many as six and seven dead rabbits in a radius of not more than 20 or 30 feet.

Rat Campaign in Texas Nets Big Results.--L. C. Whitehead, leader of rodent control in the Texas district, reports that the campaign against rats launched through the schools of Wood County, Tex., from January 4 to February 11 by Assistant Leader E. C. Cates, in cooperation with the county agricultural agent and the county superintendent, netted a total kill of 130,385 rats and pocket gophers. This represents the number actually accounted for and does not include those poisoned but not found. The merchants of the county offered \$125 in prizes. Six gross of pocket-gopher traps have been issued in connection with demonstrations of control methods against the pest, while 200 pounds of barium carbonate were issued to the cooperators. When advising Mr. Cates of the success of the campaign

and expressing satisfaction for its effectiveness, the county agent stated that by actual count 14 rodents were killed for every cent expended, and that already a saving of several thousand dollars had been effected for the people.

Pepper Plants Destroyed by Rats.--Mr. Whitehead also reports that at a certain nursery in Texas rats in one night completely destroyed 4,000 young transplanted pepper plants that it had taken three men three days to pot for shipment.

Effect of Calcium Cyanide on Rats.--I. N. Gabrielson, leader of rodent control in the Oregon district, reports that H. S. Speer, who is continuing the rat work in Portland, made an interesting discovery during the month. In using the cyanide duster and calcium-cyanide dust about a group of buildings set on cement floors, he drove 12 rats into the open. The animals were so stupefied by the gas that they could be picked up readily. Of the 12, two died within an hour, three during the next 12 hours, and three after 24 hours. Four half-grown animals were still alive at the end of four days. It thus seems evident that many of the rats that do escape the fumes may die later if they have inhaled any of the gas.

Injured in Fire.--C. R. Landon, leader of predatory-animal control in the Texas district, reports that Hunter Arnold Strey had the misfortune to be severely burned on his hands and feet when his camp was destroyed by fire one morning about 4 o'clock. When he awoke everything was in a blaze, and in trying to get out of his tent he fell over a small pile of wood that was also on fire. His whole outfit was completely destroyed and he was laid up for about two weeks.

Mountain Lion Puts up Fight.--M. E. Musgrave, leader of predatory-animal control in the Arizona district, states that Hunter A. L. Jones reports his first instance of a mountain lion actually putting up a fight. Jones had been after this lion during the entire winter, but the animal was apparently trap-wise and would get into the bluffs and keep away from the dogs. Finally, however, Jones forced the lion out into the open, and in a letter he says briefly: "I just got him before he got me."

Finds Squirrels Discriminating.--Joseph Keyes, leader of rodent control in the California district, states that observations in Contra Costa County indicate that several sections seem to have developed highly educated squirrels among the few remaining individuals; these are showing a marked discrimination against thallium-treated grain and even refuse the unpoisoned hulled barley. This seems to bear out the contention that "Education in place of Eradication" must be expected where animals survive thallium operations. It also goes far in support of the opinion that thallium is strictly a follow-up poison and should not be used in initial work.

Investigate Effect of Red Squill on Baby Chicks.--G. C. Oderkirk and Odom Stewart, both of the Eastern Rodent Control District, conducted separate investigations during the month to determine the effect of red squill rat poison on baby chicks.

Big Porcupine Kill in Maine.--According to a recent press dispatch, "more than 11,000 porcupines have been killed in a few months within a small section of Washington County, Me. At East Machias alone 2,299 have been killed. The work of keeping count of the bounties is quite a task for the town treasurers. The noses and front paws are taken to the treasurer, after which the bounty of 25 cents for each animal is paid." The Survey has written Washington County officials for verification of the report.

FOOD HABITS RESEARCH

Inspecting Wild-fowl Areas.--F. M. Uhler has completed his studies of the relation of birds to the celery leaf-tyer in Florida and is now engaged in the inspection of certain wild-fowl food areas in Georgia and South Carolina. Later he will spend a short time in North Carolina investigating reports of damage to fishing interests by fish-eating birds.

FUR RESOURCES

Returns from Field Trip.--Frank G. Ashbrook returned to Washington on May 14 from New York City and Saratoga Springs, N. Y. At New York he visited the National Association of the Fur Industry, fur-trade periodical offices, and raw-fur houses, and at Saratoga Springs inspected the work at the Fur-Animal Experiment Station. On May 11, he and Dr. Karl B. Hanson visited a Karakul sheep farm at Fayetteville, N. Y., where 400 breeding ewes are kept.

Visit Rabbit Experiment Station.--D. A. Gilchrist, leader of rodent control in Arizona, and M. E. Musgrave, leader of predatory-animal control in the same State, visited the U. S. Rabbit Experiment Station at Fontana, Calif., on their return from the recent conference at Ogden, Utah. D. Monroe Green, director of the Station, met them at Colton, Calif., showed them the buildings and grounds, and explained the work being conducted there.

Fur-Animal Disease Work Progresses.--Dr. J. E. Shillinger reports that certain facts are being established as a result of the preliminary experiments in progress in the cooperative fur-animal disease work at the University of Minnesota. These findings have proved valuable to a better understanding of diseases and the manner in which they are transmitted from one animal to another and from one ranch to another.

New Appointments.--Dr. Earle Dewey, of Minneapolis, Minn., has been appointed agent to assist in the study of fur-animal diseases, with headquarters at the University of Minnesota. He has been associated with this work since it was inaugurated by Dr. Robert G. Green at the University.

Miss Majorie Clifford Buzzell has been appointed, effective May 16, to fill the position of stenographer at Fontana, Calif., made vacant by the resignation of Mrs. Nelle Sterling.

Sympathy of the Bureau is extended to Miss Elsie Galloway in the death of her father, which occurred at his home in Trezevant, Tenn., on May 12.

GAME AND BIRD RESERVATIONS

President Approves Bear River Refuge Bill.--Carrying authorization for an appropriation of \$350,000, the Bear River Migratory-Bird Refuge Bill, which has been pending in Congress for the past two sessions, has been approved by President Coolidge. This legislation authorizes the Secretary of Agriculture to construct at Bear River Bay and vicinity, Utah, such dikes, ditches, spillways, buildings, and improvements as may be necessary for the establishment of a suitable refuge and feeding and breeding ground for migratory wild fowl and to acquire, by purchase, gift, or lease, water rights and privately owned lands necessary for the purpose. The Bear River marshes, on Bear River Bay, comprise the greatest wild-fowl area of its kind in the Rocky Mountain region and form the gathering place for millions of wild ducks and geese during their north and south migrations. The new law seeks to improve conditions in the region so as to prevent a recurrence of the enormous losses of migratory wild fowl that have resulted from the concentrated alkaline waters there. It is estimated that in the past few years not less than 7,000,000 ducks alone have perished, owing to scanty rainfall and the diversion of water for irrigation purposes from Bear River and other streams tributary to the marshes in that district, the shallow waters in many parts of these marshes during summer and fall of each year becoming concentrated solutions of alkali.

The building of dikes and other improvements to store waste fresh waters, now flowing into Salt Lake, for the purpose of reflooding the Bear River marshes, will eliminate the death areas and afford a breeding ground for great numbers of the birds. The act stipulates that not more than \$50,000 shall be expended for the purchase of land, and that not less than 60 per cent of the area acquired shall be maintained as an inviolate sanctuary for migratory birds. The Bear River project is primarily the heart of the wild-fowl conservation problem of the 11 States west of the Rocky Mountains, and it has been conclusively shown by bird-banding operations of the Survey conducted in the region that these marshes form a distributing center supplying migratory wild fowl to all the surrounding States. It is predicted that the food value of the birds that can be saved in a single season, not to mention recreational and esthetic values, will be far in excess of the cost of the proposed improvements. Sportsmen and conservationists throughout the country will welcome the measure as a most far-reaching step in the wild-life conservation program.

Large Area Given For Upper Mississippi Refuge.--A joint resolution recently approved by President Coolidge authorizes the Secretary of Agriculture to accept from James B. Munn, of New York City, on behalf of the United States, a gift of certain lands in Clayton County, Iowa, to become a part of the Upper Mississippi River Wild Life and Fish Refuge. These lands, embracing a total area of 488 acres estimated to be worth thirty or forty thousand dollars, were generously donated to the Government by Mr. Munn through his interest in the objects of the refuge. Situated near McGregor, Iowa, the lands are more or less overgrown with original timber and are especially attractive for upland migratory birds. One parcel includes

an excellent lookout point, known as Pikes Peak, that will be of great value in connection with fire protection, administrative uses, and other purposes on the refuge. Although adjacent to the lowlands embraced in the refuge much of the area is not subject to overflow, as it extends up into the hills bordering the river bottoms, and the inclusion of this high land will lend variety to the refuge and should attract and protect additional species of wild life.

Pathfinder Refuge Re-established.--By recent order, President Coolidge has re-established for the protection of native birds the Pathfinder Bird Refuge, embracing 22,700 acres along the North Platte River in central Wyoming. All the lands involved have been withdrawn for reclamation purposes in connection with the North Platte Project, Wyo., and are primarily under the jurisdiction of the Department of the Interior. The establishment of the refuge provides not only nesting grounds but important feeding and resting places for the large number of migratory waterfowl, especially ducks, in a region where open water providing a haven for birds is scarce. The area includes mainly a large reservoir constructed for the use of the Reclamation Service in the irrigation of lands.

Hay Feeding Ceases at Elk Refuge.--The feeding of hay at the Elk Refuge, Wyo., ended near headquarters on April 14, and on the lands of the Izaak Walton League Addition a week later. Most of the elk that were on the feeding grounds during the last of April were pasturing on the refuge and adjacent ranches, with a few scattering out over the near-by foothills. By the middle of the month, practically all the snow had melted on the meadow lands, making some forage available. Migratory birds of many kinds returned to the refuge during April. Two pairs of sandhill cranes and some curlews and western willets have been seen near headquarters.

New Fence Built.--Three and one-half miles of new partition fence, marking the boundary of Elk Refuge lands and those of adjacent ranchmen, were constructed during April.

Antelope Breaks Leg.--The 5-year-old antelope at Sullys Hill Game Preserve, N. Dak., was found in the pasture one day early in May with a broken hind leg, the animal probably catching it in the brush while running through the woods. The bone was set, splints put on the leg, and the animal placed in a small inclosure. The leg has since been put in a plaster cast by a veterinarian. The first Franklin ground squirrels of the season were seen at Sullys Hill on April 22. On April 18, the heaviest snowstorm of the winter and spring occurred there.

A total of 359 visitors and 52 cars were at Sullys Hill during April.

Bison Range Notes.--E. C. Cates, assistant leader of rodent control work in Montana, is on the Bison Range, Mont., conducting a poisoning campaign against Columbia ground squirrels.

Warden Frank H. Rose assisted with the American Forest Week program in April by speaking at 20 schools and mass meetings on the Flathead Indian Reservation, Mont.

The first buffalo calf of the season arrived at the Bison Range this year on April 27, within a week of the dates of first arrivals during each of the past four years.

Buffalo Calves on Big-Game Preserves.--Three buffalo calves are reported at the Bison Range, Mont., 8 at Niobrara Reservation, Nebr., and 13 at Wind Cave Preserve, S. Dak.

Burning of Mallard Nesting Sites Discouraged.--Warden Rose, of the National Bison Range, states that at the end of April ducks were nesting in northwestern Montana with weather favorable to a good hatch. Some effort has been made in that section to discourage the burning of ditch banks, pasturelands, and stubblefields, especially between the first of April and the end of May, for it is in the accumulation of dead vegetation of the previous year that mallards nest, and the common practice of burning these areas at this season destroys many eggs.

Starving Stock Found at Lake Malheur.--About 20 head of livestock were found by Warden George M. Benson and U. S. Game Warden R. C. Steele on an island in Lake Malheur, Oreg., on April 7. Some of the animals were dead and the others starving. On April 9, Warden Benson with a rescue party went to the island in a motor boat to rescue the marooned stock. Some of the animals were too weak to be moved and so had to be killed; but seven horses, a cow, and a calf were saved. No information is available as to when or how the stock reached the island.

Fire at Lake Malheur.--On April 25 a fire occurred at Lake Malheur Reservation about two miles from Narrows, Oreg., caused through carelessness of a resident of the locality who, after starting a fire to burn weeds and trash, let it get beyond control. Approximately 400 acres of tule and pastureland were burned, but the warden believes that no damage was done to bird life.

Buffalo To Be Shipped to Alaska.--Arrangements are being made to ship 23 buffalo (6 males and 17 females) from the National Bison Range, Mont., to Seattle, Wash., about the middle of June for later shipment to Alaska, where the animals are to be placed in the Tanana Valley region in the interior of the Territory. The work is being carried out by the Alaska Game Commission under funds appropriated by the 1927 Territorial Legislature. The Commission will send a representative from Fairbanks to accompany the animals. This project is an addition to a general plan for stocking lands of Alaska with valuable fur and game animals adopted by the 1925 Legislature, which appropriated \$10,000 for the biennium ending in 1927. Several species of fur-bearing animals and some deer and elk have already been transferred and introduced at various points in Alaska in this program.

High Water at Big Lake.--High water at Big Lake Bird Reservation, Ark., resulting from heavy rains in April reached its highest stage on April 27.

Appointments.--Charles I. Park, of Key West, Fla., has been appointed warden at Tortugas Keys Bird Reservation, Fla., to serve during the nesting season. Geo. H. Winslow has been appointed boatman at the Upper Mississippi River Wild Life and Fish Refuge.

IMPORTATIONS

Quail Importations Close for Season.--The season for the importation of quail from Mexico closed on April 30, and the number of birds brought in at the three ports of Laredo, Brownsville, and Eagle Pass, Tex., aggregated 84,915. These birds were shipped to several States, but the largest numbers went to Alabama, Florida, Georgia, Kentucky, Maryland, Oklahoma, and Texas.

Married.--Word has been received of the marriage of Mrs. Sam Brown Davidson, one of the Survey's inspectors of foreign birds and mammals at San Francisco. Before her marriage Mrs. Davidson was Miss Mary Ella McLellan, of the California Academy of Sciences.

MIGRATORY-BIRD TREATY AND LACEY ACTS ADMINISTRATION

Film Shorebird Flight.--Talbot Denmead and Warden T. T. Bloxson spent the week of May 14 on the marshes at Wachapreague, Va., and vicinity taking moving pictures of the shorebird flight and obtaining specimens needed for the Survey collection.

Visits New Jersey Wild-Fowl Region.--W. R. Dillon was in Salem and Atlantic City, N. J., May 8 to 10 conferring with Warden Albert Stadlmeir and Deputy Warden Frank Pierce with reference to wild-fowl conditions in their section and inspecting the motor boats Plover, Brant, and Sanderling. Mr. Stadlmeir stated that early in May there were several thousand yellow-legs on the marshes near Atlantic City, but during Mr. Dillon's visit a northeasterly gale was blowing and few birds were observed. Black ducks nested profusely throughout the Salem marshes this year as usual.

Mercer Jury Deadlocked.--The trial of former State Game Warden Floyd Mercer in Corporation Court at Norfolk, Va., in connection with the killing of two game-law violators in Princess Anne County, Va., lasted three and a half days, from April 25 to 28. About noon on the fourth day the jury reported that they were hopelessly deadlocked, the judge declared a mistrial, and the jury was discharged. The joint trial of Mr. Mercer, Federal Warden W. L. Birsch, and former Deputy State Game Warden John T. Capps has been set for June 11.

Mallards and Canada Geese High Among Birds Propagated.--An examination of all the propagating reports for 1927, so far as they have been received up to May 16, shows that there were raised in captivity under Federal permits during 1927 the following numbers of wild fowl:

Mallard ducks -----	39,695	Baldpates -----	17
Wood ducks -----	670	Ring-necked ducks -----	3
Pintails -----	169	Scaups -----	2
Teal (blue- and green-winged)-	41	Canada geese -----	4,651
Teal (cinnamon) -----	42	Blue geese -----	41
Redheads -----	51	Snow geese -----	6
Gadwalls -----	57	Brant -----	1
Shovelers -----	4		

Examination of several hundred reports when received will undoubtedly show substantial increases in the numbers of Canada geese and mallard ducks raised in captivity.

Injures Foot.--Warden B. R. Britton, of Socorro, N. Mex., had the misfortune to injure his foot badly while at San Acacia, N. Mex., on May 1. An examination of the injured member, however, showed no broken bones.

With sincere regret the Survey learned of the deaths of U. S. Deputy Game Wardens James M. Folck, of Onawa, Iowa, and Peter J. Varley, of Schuyler, Nebr., during the month of April. Warden Folck passed away after an illness of several months. Warden Varley was ill only a few days.

Woodcock Nests Near Survey Boats.--Warden Stadlmeir reports that within 100 yards of the dock at which the Survey's boats are kept on Nacot Creek, N. J., he saw a woodcock's nest with four eggs in it and the mother bird sitting on them. There are many places in that section where woodcock have been boring and turning over leaves, but it is hard to find any of the birds. Mr. Stadlmeir says he has heard them many evenings about twilight, however, and also has seen a number of them in that section.

Finds Dead Gallinules on Galveston Island.--While driving along the gulf beach on Galveston Island, Tex., on April 21, Warden Clarkson saw ten dead purple gallinules that the surf had washed up on the beach. He states that he believes these birds were migrating and became exhausted somewhere over the Gulf of Mexico and were drowned. During some severe weather in the week of April 8, Mr. Clarkson noted that plovers were having a rather hard time, but that they were fat and gentle.

Four Swans Noted in Illinois.--Warden K. F. Roahen saw four swans in the Banner, Ill., district on April 29--the first he has seen in that section since he took up his official duties in Illinois in 1924.

To Permit Killing of Gulls Destroying Blueberries.--By an order of May 16, the Secretary authorized the issuance of permits for the killing of herring gulls destroying blueberry crops in Maine. The permits will be issued by the Commissioner of Inland Fisheries and Game, Augusta, Me., and will cover the period July 20 to August 20, inclusive, at which time the berries are picked. Persons to whom permits are issued are required to keep a record of the number of gulls killed, and to report this to the Commissioner of Inland Fisheries and Game and also to the Biological Survey.

Addresses Game Conference.--Talbot Denmead was one of the principal speakers at a conference of game officials, wardens, and sportsmen held at Roanoke, Va., on May 26 under the arrangement of the Virginia Commission of Game and Inland Fisheries. He addressed the conference on the subject "Federal Protection of Migratory Birds."

Exhibit at Sportsmen's Show Well Liked.--The Survey's exhibit at the Izaak Walton League Convention and Sportsmen's Show held in Omaha, Nebr., April 18 to 21 was well received, according to Warden J. Q. Holmes, who was in charge of the exhibit. He reports that the attendance during the four days was more than 11,000.

Federal Game Warden Dies.--Members of the Washington office were shocked to learn that United States Game Warden T. T. Bloxsom, of Locustville, Va., died on the morning of June 1. Mr. Bloxsom had been in the service of the Biological Survey since 1913 and was well known to practically all the warden personnel. No details of the cause of his death are available as THE SURVEY goes to press, but it is known that he had not been in good health for a year or more.

Cases Terminated--Reports Received During April

<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Birsch	3	North Carolina	Killing coots from a motor boat	\$25 each
Creighton, Haislip*	1	Maryland	Killed a duck from a motor boat	\$5
Klassen**, Roahen	2	Illinois	Possessing coots in close season	\$25 each
Perry	1	Alabama	Killing ducks after sunset	\$10
Ransom	1	Idaho	Killing ducks after sunset	\$10
Riddick, Thomason**	1	Arkansas	Killing ducks after sunset	\$25
Shaver, Beals**	1	Minnesota	Hunting coots in close season	\$25
" "	2	"	Hunting ducks after sunset	\$25 each
" "	2	"	Hunting coots after sunset	\$10 each
" "	1	"	Hunting ducks after sunset	\$10
Steele, R. C.	4	Washington	Killing sandpipers	\$10 each
Tonkin	2	Nevada	Killing doves in close season	\$100 each; 40 days each in jail; (Presi- dential pardon issued after serving 30 days.)
Whitehead	2	Georgia	Possessing herons	\$10 each

* U. S. Deputy Game Warden.

** Deputy State Game Warden.

Cases Reported for Prosecution

<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Barmeier	3	Missouri	Possessing ducks in close season
Barmeier, Ferrier*	1	Illinois	Possessing ducks in close season
Barmeier, Mrovka*, Ferrier*	2	"	Killing ducks in close season
Carlock*	2	"	Killing ducks in close season
Hoffman	1	Mississippi	Selling ducks
Holmes, Jago**, Riant**	3	Iowa	Possessing ducks in storage in close season
Holmes, Taylor**	2	Missouri	Hunting jacksnipe in close season
Jans*	1	Illinois	Possessing a cat bird
"	1	"	Possessing a duck in close season
"	1	"	Possessing plovers and sandpipers
"	2	"	Possessing plovers
Linebaugh, Silvers**	1	Tennessee	Killing ducks from a motor boat
McCarley*	2	Florida	Hunting coots from a motor boat
Mushbach, Carlock*	3	Illinois	Killing ducks in close season
Riddick, Thomason**	3	Arkansas	Killing ducks after sunset
Roahen	5	Iowa	Possessing ducks in storage in close season
"	1	Illinois	Possessing ducks and geese in storage in close season
"	1	"	Possessing a duck in close season
"	6	"	Hunting ducks in close season
Roahen, Anderson*	4	Iowa	Possessing ducks in storage in close season
Roahen, Scholler*	1	Illinois	Possessing ducks in storage in close season
Roahen, Shaver	2	"	Killing ducks in close season
Shaver, Harris*	3	"	Possessing ducks in close season
Shreve*	1	Louisiana	Killing ducks in close season
Smith	1	Maine	Hunting geese in close season
Stadlmeir	1	Delaware	Killing a swan
Steele	3	Missouri	Killing ducks and snipe in close season
Steele, Holmes	1	"	Killing a goose in close season
" "	3	Nebraska	Possessing ducks in close season
Steele, Huhn**	2	Missouri	Killing ducks in close season
Whitehead	1	Georgia	Killing wood ducks
Whitehead	1	South Carolina	Killing ducks in close season
Whitehead, Felder**, Stewart**	7	Georgia	Killing doves prior to half an hour before sunrise
Whitehead, Saye*	1	"	Possessing a dove in close season
Whitehead, Smith**	1	South Carolina	Killing ducks from a motor boat

* U. S. Deputy Game Warden.

** Deputy State Game Warden.

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THE SURVEY

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Vol. 9

Washington, D. C., June 30, 1928

No. 6

GENERAL NOTES

Chief Now in the Aleutians.--Word received from Mr. Redington, at False Pass, at the end of the Alaska Peninsula, under date of June 21, shows that he is well up to his schedule of travel. He will next proceed westward to Akutan, Unalaska, and other islands of the Aleutian Chain, possibly as far as Umnak, before going northward to Nome and thence into the interior to Fairbanks and other points. He has the best wishes of the Survey for a continuance of profitable and enjoyable journeys by land, air, and water.

Two Divisions Consolidated.--The Secretary has approved the recommendation of Mr. Redington that the Division of Game and Bird Reservations and the Division of Migratory-Bird Treaty and Lacey Acts Administration be consolidated, with a view to preventing what was seen to be a tendency toward an overlapping of activities, and to weld two related lines of service and regulatory work into one. The change will better correlate the work of the Survey and will be in the interests of efficiency and economy, particularly in connection with the development of refuges and reservations for migratory birds. E. A. Goldman, now in charge of the Reservations Division, will be engaged on scientific research work, for which he is highly qualified by his many years of experience in problems and investigations of the Survey. H. P. Sheldon will be in charge of the combined division, which, after July 1, will be known as the Division of Game and Bird Conservation. The titles of U. S. Game Wardens have been changed to U. S. Game Protectors, and those of Reservation Wardens to U. S. Reservation Protectors. The titles of U. S. Deputy Game Wardens will remain as formerly.

The Welch Salary Act.--Under the Act of May 28, 1928 (Public No. 555--70th Congress), generally known as the Welch salary increase bill, revised salary grades have been established to supersede those in the classification act of 1923. Not only does the new law apply to the "in Washington" personnel, but heads of the several executive departments and independent establishments are authorized to adjust the compensation of certain positions in the field service. These include those positions the compensation of which was adjusted by the act of December 6, 1924, to correspond, so far as practicable, to the rates established by act of 1923 for the Washington personnel. The only changes in the new act affecting grades with salaries ranging to \$3,600 under the original act is in the number of steps in the grades, and the raising of the minimum and maximum salaries of the grades. The effect on most of these grades is to eliminate the two lower steps and to add one step at the top. The new act also provides that employees affected shall retain the same relative position within their respective grades as they hold at the time the law goes into effect.

In a decision of June 2, 1928, the Comptroller General has stated the rule for determining the relative position for employees in the new grades and the salaries they are to receive. The working of this rule in grades that have had the number of steps reduced by one has the effect of providing promotions of two steps to those employees whose relative positions are below the average salary of the new grades, and one step for those whose relative positions fall at the average or above. Thus, employees in grades with \$60 steps will receive increases of \$120 or \$60, depending upon their position in the grade. Likewise employees in grades where the steps are \$100 will receive either a \$200 or a \$100 increase. In some instances where an employee is now at the minimum of the old grade and would go to the minimum of the new grade the increase does not work out exactly on the one or two step basis, as, for instance, in Professional Grade 1, the minimum salary has been advanced from \$1,860 to \$2,000, which means an increase of \$140. In the custodial service the increases in positions below the average of the grade starting with Grade 2, amount to \$180 in those grades having \$60 steps.

Professional Grade 4 and Clerical, Administrative, and Fiscal Grade 11 now comprise respectively new Grades 4 and 5, and 11 and 12. New Grades 4 and 11 have four \$200-steps from \$3,800 to \$4,400 and new Grades 5 and 12 have four \$200-steps from \$4,600 to \$5,200, which is one step higher than the original grades 4 and 11. The basic specifications of the original Grades P 4-7 and CAF 11-14 under the old law have been advanced one or two grades, and the effect, which is borne out by the Comptroller's decision, is to advance, with substantial promotions, employees into the higher grades, which now have basic specifications of the old grades.

The salaries of all employees affected by the new act are being adjusted as of July 1, to conform to the revised classification grades, so that in due course new appointments will be issued and employees will appear on the July salary rolls at the new rates of pay.

Another provision of the new law of interest to field employees is that the Personnel Classification Board is to make a survey of certain field positions and present a report to Congress at its next session. This means that during the next few months classification schedules will be prepared for the field service following the principles and general form of the compensation schedules contained in the classification act of 1923.

SURVEY Committee Meets.--The first meeting of the committee on THE SURVEY for the year was held on June 19, with Dr. W. B. Bell, chairman, presiding, and the following members present: Mrs. A. B. Morrison, representing the Administrative Offices; E. A. Freble, Biological Investigations; E. R. Kalmbach, Food Habits Research; Dr. J. E. Shillinger, Fur Resources; Stanley P. Young, Economic Investigations; Ernest P. Walker, Game and Bird Reservations; W. R. Dillon, Migratory Bird Treaty and Lacey Acts; Dr. T. S. Palmer, Importations; Lisle Morrison, Exhibits; Wm. H. Cheesman, editor; and Paul H. Oehser, assistant editor. Policies for the house organ, now in its ninth year of

issue, were discussed. Two changes in form of THE SURVEY adopted during the past year received favorable comment: The side headings that are being used for each item, and the new practice of citing articles by Bureau men in outside publications. Among matters discussed was the desirability for each division occasionally to mention in THE SURVEY outstanding magazine articles and new books that will be of assistance to field men in their work. It was felt that this would be an excellent plan if kept in brief citation or review form. It was stated also that additional precautions would be taken to be specific in the names of birds and animals mentioned; for instance, instead of "gopher," pocket gopher should be used to avoid confusion in different localities; instead of "ground squirrel," Columbia or other ground squirrel; or instead of "geese," Canada geese, etc. It was the general opinion that, based on field reports, THE SURVEY in its present form, is filling a real need among the personnel, and that it would not be feasible, or necessary, in view of the always interesting character of our subject matter, to include as a general practice pictorial or other embellishments.

The Committee welcomes any constructive comments and criticisms, either as to form and content, both from members of the Washington office and the field force. In other words, give us your help in making our house-organ as serviceable as possible to every member of the Bureau.

Official Publications.--The following official publications of the Biological Survey were issued during the month, including seven articles in the 1927 Yearbook of Agriculture not to be separately reprinted:

- "Bears Sometimes Unjustly Blamed as Stock Killers," by Stanley P. Young, Yearbook 1927, p. 119-122, illus.
- "Bird Banding Tells Biological Survey of Migration Behavior," by Frederick C. Lincoln. Yearbook 1927, p. 135-136, illus.
- "Bird Refuges to Protect Waterfowl Urgently Needed," by Talbott Denmead. Yearbook 1927, p. 136-138, illus.
- "Fur Farmers Lose Many Foxes through Infectious Disease," by Karl B. Hanson and Frank G. Ashbrook. Yearbook 1927, p. 342-344.
- "Game Law Improves Wild-life Conditions in Alaska," by Ernest P. Walker. Yearbook 1927, p. 344-346, illus.
- "Toads Destroy Many Harmful Insects and Should be Protected," by Remington Kellogg. Yearbook 1927, p. 620-622, illus.
- "Federal Bird Refuges and Game Preserves." Yearbook 1927, p. 729-734, tabulated list, with chief species protected and map of locations.
- "Chinchilla Rabbits for Food and Fur," by D. Monroe Green. Leaflet No. 22, 8 p., illus. Received June 20.
- "Feeding Vixens and Pups," by Frank G. Ashbrook and Karl B. Hanson. Mimeographed leaflet Bi-972, 3 p. Received June 11.

Outside Publications.--The following articles by members of the Biological Survey appearing in outside publications have been reported during the month:

"Game and Fish Laws," monthly department by Frank L. Earnshaw. Field and Stream, vol. 33, no. 2, p. 78-81, June, 1928.

"Birds of the Oregon District: The Season," by Ira N. Gabrielson. Bird-Lore, vol. 30, no. 3, p. 205-206, May-June, 1928.

"Automatic Nomenclature," by W. L. McAtee. Proceedings Entomological Society of Washington, vol. 30, p. 72-76, May, 1928.

"December and January Birds about Washington, D. C.," by Harry C. Oberholser. Bird-Lore, vol. 30, no. 2, p. 128-129, March-April, 1928.

Congratulations are being extended to Mr. and Mrs. Dana P. Miller on the birth of an 8-pound son, on June 25. Mr. Miller handles the salary rolls of the Office of Accounts.

BIOLOGICAL INVESTIGATIONS

Taylor's May Activities.--Dr. W. P. Taylor devoted some time in May to jack-rabbit studies, to obtain information needed for a report on the subject. On May 12 he took a prominent part in the dedication exercises of the Santa Catalina Natural Area, in the mountains near Summerhaven, an area that will be administered by the Forest Service. The establishment of this area resulted from efforts initiated several years ago by the Tucson Natural History Society, in line with the policy of the Forest Service to set aside areas where the fauna and flora shall remain as far as possible in a state of nature. The present tract, which is the first to be approved under this plan, comprises more than 4,400 acres at an altitude ranging from 4,800 to 9,150 feet, in the Marshall Gulch region.

A visit to Tucson of G. A. Pearson, director of the southwestern Forest Experiment Station, at Flagstaff, gave Doctor Taylor opportunity to make a trip into the Santa Rita Mountains, and to confer on proposed experimental plots, and to study the effect of rodents on yellow pine reproduction at Flagstaff. During the latter part of May and early in June he did some preliminary work on the problem of fluctuations in mammal population.

Elk-feeding Observations.--O. J. Murie devoted most of May to studying the feeding habits of elk after they had left the winter feeding grounds, and were following the snow line back to their summer haunts in the mountains. The condition of the areas where elk had wintered, both on the regular feeding grounds and in other areas, were also examined with care. In the study of winter food plants, the actual preferences displayed by the elk for various foods could be determined only in a general way, because of the destructive influence exerted by the necessarily heavy concentration. Collateral studies included observations on two nests of great horned owls, which, because of their close proximity to ranches and the haunts of certain game birds, will afford interesting and valuable data.

Forest Wild Life Studies.--A. H. Howell returned May 28 from a six weeks' stay on the Pisgah National Forest, near Asheville, N. C., where in cooperation with the Forest Service he was carrying on studies of the relation of mammals and birds to the forest. Several two-acre tracts in the forest were trapped intensively to determine the actual mammal population on various forest-types. The stomachs of all mammals collected were saved for future examination. Several interesting captures of mammals were made, including some that afforded notable extensions of range. A short trip was made to the summit of Mount Mitchell to obtain information on the breeding birds of the region, and to determine the boundaries of the life zones.

Experiments in Caribou-Reindeer Crossing.--L. J. Palmer in his report of activities in May gives details of the results of crossing reindeer with wild caribou. The fawns born of matings between reindeer does and caribou bulls weighed 12 to 16 pounds, substantially more than reindeer fawns. The fawns were born between May 4 and May 13, the period of gestation ranging from 234 to 246 days. The fawns double their weight in from 14 to 18 days.

Scheffer Studies Moles, Pheasants, and Seals.--T. H. Scheffer devoted a considerable part of May to investigations of various mammals that are active pests to the bulb-growers. Work was confined mainly to Washington where the damage is caused mainly by moles and their followers, the burrowing meadow mice. Present damage by the mold to bulbous plants seems limited to the tulip. In the case of the bulbous irises, however, the mole, while not itself injuring the tough roots, helps the mice to gain access to the bulbs, and these do serious damage. Damage by pheasants to planted seeds of corn and peas made necessary some preliminary experimental work in the treatment of seed with various deterrent substances that will not at the same time affect the germination. A collection was made of stomachs of the harbor seal, taken off the mouth of Nisqually River. These and others it is proposed to collect should furnish a fair index to the actual food of this species in Puget Sound at this season.

Visitors to the offices and laboratories of the Division included the following: May 29, Dr. Clinton G. Abbott, Director, Natural History Museum, San Diego, Calif.; June 6, Walter B. Savory, Wareham, Mass., and William Hahn, Jr., Greenwood, S. C.; June 7, Dr. Wilson P. Gee, University of Virginia, Charlottesville, Va.; June 11, Dr. and Mrs. J. P. Wilson, University of Kentucky, Lexington, Ky.; June 12, Aldo Leopold, formerly connected with the Forest Service, and actively interested in wild-life conservation.

FOOD HABITS RESEARCH

Uhler Returns from the South.--At the conclusion of his study of the relations of birds to the celery leaf-tyer in Florida, F. M. Uhler inspected duck-food areas at St. Marys, Ga., and Whitehall and Yonges Island, S. C. Before his return to Washington on May 20, he also consulted fishermen and others relative to damage inflicted by fish-eating birds in the Pamlico River and Lake Mattamuskeet, N. C.

FUR RESOURCES

Attends Meetings of Fur Animal Breeders.--Mr. Ashbrook left on June 3 for an extended trip through the Central and Western States. He stopped en route at Minneapolis to confer with Dr. Earle Dewey, agent of the Bureau, and Dr. R. G. Green of the University of Minnesota, who are engaged in the cooperative study of diseases of foxes. He reports gratifying results following some extensive experimental work in controlling certain infectious diseases of these animals. On this trip he will address meetings of fox farmers at Denver and Salt Lake City and of rabbit raisers at Phoenix, and will visit the new Rabbit Experiment Station at Fontana, Calif. On his return he will make official stops at a number of northwestern cities, probably reaching Washington about July 15.

Associations Invite Survey Speakers.--This is the season for summer conferences of associations of fur-animal breeders, and a number of them have requested representatives of this division to appear on their programs. In addition to the conference Mr. Ashbrook will attend, Dr. Earl Dewey has been invited to address the Wisconsin meeting at Sheboygan, and Minnesota meeting at Minneapolis, and the Iowa meeting at Ames.

New Leaflets Issued.--In line with the program to furnish in leaflet form, printed or mimeographed, information being constantly sought by correspondents, this division has prepared two additional that have made their appearance during the month. "Chinchilla Rabbits for Food and Fur," prepared by D. Monroe Green, is the title of an 8-page publication of the Department, Leaflet No. 22, the first copies of which were received on June 20. This leaflet presents an accurate description of the breed, information concerning its food and fur value, and shows how Chinchilla rabbits compare with other breeds and varieties being raised for commercial purposes. The other leaflet was issued in mimeographed form on June 11--Bi-972, "Feeding Vixens and Pups," and was prepared under the joint authorship of Messrs. Ashbrook and Hanson. In its three pages it gives the rations for vixens at various times and for young foxes during each month before and after weaning, based on experiments in feeding foxes conducted at the Saratoga Springs Station of the Survey.

Attends National Convention.--Miss Elsie Galloway attended the national convention of the Women's Overseas Service League, at Boston, Mass., June 23-27. During the war she was connected with the Red Cross forces in France and is now the national corresponding secretary of the League.

ECONOMIC INVESTIGATIONS

Crouch Begins Duties in Washington.--W. E. Crouch, for the past twelve years leader of rodent control in the Idaho district, reached Washington on June 12 to take up his new duties at headquarters.

Gatlin Heads Oklahoma-Arkansas District.--John C. Gatlin, who has been assisting A. E. Gray in rodent and predatory-animal work in the New Mexico district, was transferred to the newly created Oklahoma-Arkansas predatory-animal district on June 20, where he will assume leadership of the work in these two States with headquarters at Oklahoma City, Okla. The control operations will be carried on cooperatively with the Oklahoma and Arkansas State Game and Fish Commissions.

Ogden Conference Report.--The final editing of the report on the matters discussed at the Ogden conference, embodying many new policies to be effective July 1, has been completed. Mimeographed copies should reach the field offices within a few days.

Reports on Squill and Thallium.--Manuscripts for two new technical bulletins on squill and thallium sulphate under the joint authorship of Dr. J. C. Munch, who has been temporarily employed as pharmacologist by the Biological Survey, and James Silver, Assistant Biologist of this Bureau, are fast nearing completion and within a short time will be ready for publication. E. E. Horn, Assistant Biologist of this Bureau, also contributed data for the squill bulletin. The two publications when issued will be of much value in giving a keener insight into the merits of these two poisons in rat-control operations.

Bubonic Plague in California.--Joseph Keyes, leader of rodent control in the California district, reports that bubonic plague has again put in appearance among ground squirrels in San Benito County. Every effort is being made by the Horticultural Commissioner to cover the infested areas as far as practicable.

Black Rat Taken in Washington.--L. K. Couch, leader of rodent control in the Washington district, reports that the cooperative rat campaign in Tacoma continues to make good progress. A mile and a half of waterfront has been almost entirely cleared of rats. The Survey's rat film was shown at several theaters during the month, and radio talks brought many calls for assistance from residents of the city. One black rat (Rattus rattus rattus) was caught in the top of a wheat elevator. This specimen was saved, and forms the second authentic record for the State of Washington.

Poison Grain mixed in Bulk.--Mr. Couch also reports that in accordance with suggestions adopted at the Ogden Conference, plans are being formulated to mix all poison grain in the district at a central location. This will tend toward uniformity and will largely eliminate the expense of local labor at rush times. It is hoped to have the plan in operation in the Washington district by next fall.

Rodent Control Supervision Popular in New Mexico.--A. E. Gray, leader of rodent and predatory-animal control in the New Mexico district, reports that the demands for assistance in rodent control are heavier than ever before, and that in nearly every instance the people are asking for supervision of the work, remarking that "there must be something in the way the stuff is put out." More than two tons of poisoned grain were sold cooperatively direct from the New Mexico headquarters to 82 farmers and stockmen throughout the State during May.

Mountain Lion Caught in Texas.--C. R. Landon, leader of predatory-animal control in the Texas district, reports that Hunter E. A. Norton caught a mountain lion in Uvalde County under rather unusual circumstances: while riding his trap line on May 22 he found that a trapped coyote had been dragged away into a clump of bushes and hidden, after being partly eaten by a mountain lion; making several sets around the carcass, he found the mountain lion in the trap the following morning.

Wolves Taken in Texas.--Mr. Landon likewise reports that Hunter Sam Lewis made an exceptionally noteworthy catch of 28 red wolves and 1 bobcat during May.

Sympathy is extended to the family of Mr. R. R. Hill, of Fayette, Utah. Mr. Hill, who had been employed as a hunter by the Bureau for a number of years and had resigned a little more than a year ago because of ill health, died on May 22. Since his death, his son, Hunter Lavar Hill, also has been confined to his home on account of illness, but is reported as improving.

Eastern District Activities.--James Silver, leader of rodent control in the Eastern District, recently spent two days on Long Island, N. Y., assisting with the control of muskrats that have been menacing the embankment of an artificial lake in a public park. Mr. Silver also recently visited points in Pennsylvania, New Jersey, Maryland, and North Carolina, in connection with the development of rodent-control projects in these places. E. M. Mills, of the New England section, conducted twenty demonstrations and seven night meetings in connection with the control of woodchucks and rats in New Hampshire and Vermont during the month. Odom Stewart, of the North Carolina section, spent ten days with A. H. Howell of the Division of Biological Investigations, at the Appalachian Experiment Station of the Forest Service, near Asheville N. C., noting the relation of rodents to forest reproduction.

Horse Injures Hunter.--Hunter Seth Shumway, of the Utah district, was seriously injured on May 15 when his horse fell with him. Latest reports indicate that he is improving.

Livestock Carrying Increased by Rodent Control.--A report to L. L. Laythe, leader of predatory-animal and rodent control in the Colorado district, by a stockgrower of Monte Vista, states that the rodent work on the Rio Grande Forest last year had so improved the range on his allotment that next year he will have enough feed to carry 500 head of cattle, where last year he carried only 400.

Whole Coyote Family Destroyed.--Mr. Laythe also reports that Hunter Joe Reich recently took a den of coyotes and both parents on a lambing range in Delta County. Upon finding the den, Reich closed the mouth and set six traps about for the old animals, and on the following morning found the male in the trap. Thinking that the female had escaped, he dug out the den and found her inside, one foot missing and a shot through the right hind leg, which was stiff in the knee and grown out to one side.

Garlough and Horn at Washington.--F. E. Garlough, the new leader of the Eradication Methods Project, and E. E. Horn, investigator in this project stationed at Berkeley, Calif., effective July 1, were in conference with officials at Washington for a few days the latter part of June relative to plans to be carried out in this project. It is expected that this conference will help to put the project forward in a progressive manner.

Colonel Sheldon Honored

In recognition of his services to the University, to the State of Vermont, and to the country at large, Norwich University, of Northfield, Vt., on June 15 conferred the honorary degree of Master of Science on Harold P. Sheldon, Chief United States Game Warden (title changed July 1 to United States Game Conservation Officer). The citation read, "soldier, pioneer in aviation, author, lover and conservator of wild life, our loyal and helpful friend." Because of Colonel Sheldon's natural modesty, the above very fine action of Norwich in honoring both the Colonel and the University, did not come to the attention of THE SURVEY until it was in the proof stage, hence this postscript on an unfilled page. THE SURVEY joins his many friends in sincere congratulations on this new and added honor that has come to him. It is appropriate to mention here that he has written a "History of Norwich University in the World War," and that the book will be published early this fall by the State of Vermont.

GAME AND BIRD RESERVATIONS

Elk Return to Summer Ranges.--Most of the elk that came to the Elk Refuge, Wyo., during the fall and winter have again migrated north to the Teton State Game Preserve and summer ranges. On June 1 a few were still scattered through the near-by timbered foothills, though none were seen on the Refuge after the middle of May.

Motion Picture Exhibited.--A portion of the reel of pictures taken on the Elk Refuge during the past winter by O. J. Murie, was shown in the Motion Picture Laboratory of the Department on the morning of May 15. The subjects were well chosen and showed operations of feeding hay to the elk, and one good-sized herd of the animals, many of which still retained their antlers. It is planned to obtain more material of this character with a view to having a complete story of the operations at the Refuge.

Visitors at Niobrara Reservation, Nebr.--A large number of pupils from the public schools visited Niobrara Reservation on May 26. This is a yearly event arranged by the county superintendent of schools.

Big-Game Animals at the Bison Range, Mont.--On May 31, there were 14 mountain-sheep lambs in the herd at the National Bison Range. Seventy-four elk and ten young buffalo were sold and, on May 26, shipped from the reservation for placing on a private range in Montana.

A pair of buffalo were recently shipped from the Bison Range to New York for reshipment to Venezuela. We have been informed that the female died en route. Five additional buffalo have been shipped from the Bison Range to an animal farm at Woodside, Long Island, N. Y.

Sullys Hill Game Preserve Notes.--Many visitors have been coming to Sullys Hill Preserve during the past month, a large number being school children and their teachers. The Fort Totten Indian School had its picnic at this Preserve on May 24, at which time the children were taken on a hike to Sullys Hill within the reservation.

Many ducks are nesting around the small lake within the preserve. A number of goldeneyes are using the boxes that were placed on trees, and many mallards are nesting on the ground. On May 14, a pair of nesting Canada geese were found on a timbered hill above the lake. Three eggs were in the nest and these were placed under a domestic hen. Three young goslings were hatched, but one died.

Seven young and one adult antelope have been turned into a larger pasture adjoining headquarters. The antelope that recently broke its leg is now recovering from the injury, and the plaster cast can probably be removed in the near future. Two young buffalo calves are in the herd at Sullys Hill.

Murphy Succeeds Hall at Winona.--Stanley B. Hall, of the Solicitor's Office, who has been in charge of the examination of titles for the acquisition of lands for the Upper Mississippi River Wild Life and Fish Refuge, at Winona, Minn., has resigned, effective June 1, to take up private law practice, in Boston, Mass. John A. Murphy, who has acted as Mr. Hall's first assistant, now has charge of the work.

IMPORTATIONS

Among the rarer birds imported during the month were one black cockatoo, which entered via Singapore, 28 African crowned cranes, and 10 chukar partridges from India. Permits also were issued for the importation of 2,558 eggs of game birds during the month.

Three days after the 28th anniversary of the passage of the Lacey Act (May 25) the 15,000 mark was reached in the issue of permits for the entry of wild animals and birds from foreign countries, making an average of more than 500 annually.

MIGRATORY-BIRD TREATY AND LACEY ACTS ADMINISTRATION

Mr. Sheldon returned to Washington on June 25 after an extended trip through the New England States, made in connection with the administration of the migratory-bird treaty act and regulations. He was particularly interested in conditions surrounding the abundance and scarcity of woodcock, and obtained some valuable information. (See postscript, page 9.)

Talbott Denmead was in Norfolk, Va., recently conferring with Warden W. L. Birsch, U. S. District Attorney Paul Kear, and others, relative to the enforcement of the treaty act in that section of Virginia.

Thomas Teackle Bloxsom

U. S. Game Warden Thomas Teackle Bloxsom died at his home at Locustville, Va., on Friday, June 1, 1928. Although he had been in failing health for some time as a sufferer from diabetes, he performed active duty to and including the day before his death. He had been connected with the Survey as a full-time warden since August 1, 1914, first under the old migratory-bird law and later under the migratory-bird treaty act. Widely known throughout his district, which comprised the States of Maryland and Virginia, Mr. Bloxsom had a host of friends among sportsmen and conservationists. He was buried at Accomac, Va., on Sunday, June 3, with full Masonic honors. Sincere sympathy is extended to his mother and other members of his family in their bereavement.

Following are excerpts from a letter from Warden W. L. Birsch, who attended the funeral:

"I attended the funeral services and was one of the thirty or more honorary pallbearers. The services were attended by representative citizens of every walk of life, and the flowers were in the greatest profusion. Tommy was very popular and held in highest esteem by all throughout the community. The services at the grave were conducted by the Masonic Lodge in which he held his membership. He was also a Knight Templar.

"It was to me a very sorrowful mission. Nevertheless, I am glad to have been present at the last ceremonials of a brother officer whom, from personal association, I had learned to esteem. We had worked together in the field and had been associated in court procedure, all of which association showed in him a keen judgment of duty and fearlessness in the discharge of that duty. He was courteous in his dealing with a violator, yet firm in

his decision, thorough in his every act, and a lover of his work. He found pleasure in the fields, and the duties of his office were performed effectively and without favor.

"I feel that the loss of Thomas T. Bloxsom from the field force is a severe blow and that it will be hard for the Survey to fill this vacancy with one who can command the respect and cooperation that he enjoyed throughout the district.

"I am sure that his mother, sisters, and brothers appreciate the high esteem in which he was held by the Washington officials and by his brother wardens, and have been comforted by the messages of sympathy received from all of them."

Important Lake Saved from Drainage.--Warden G. M. Riddick attended a trial on May 18 at Blytheville, Ark., as a witness for the State of Arkansas in a case in which the defendants had dug a ditch 4,200 feet long, about 20 feet wide, and 10 feet deep to drain the water off Horse Shoe Lake in Crittenden County, Ark. It was stated that this ditch would have lowered the lake about 3 feet, and that this would have exposed hundreds of acres in the shallow part, with no water to grow feed for ducks and no place for fish to spawn. The lake is about 8 miles long and from 1 to 3 miles wide, and furnishes excellent duck-hunting and fishing. The defense claimed that the water was high and the wave wash caused the banks to cave in and damage his property. The trial resulted in the granting of an injunction and ordering a dam to be placed across the ditch so that no more water could run out. According to Mr. Riddick, the outcome marks a new era in eastern Arkansas, where much damage has been done to wild life by drainage. Sentiment was very strongly against the draining of the lake, and the court's decision will do much to further wild-life conservation.

Wardens' Cars Wrecked.--Warden G. E. Mushbach, of Billings, Mont., had the misfortune to have his new automobile badly wrecked on May 5 when run into by another car, and will likely be deprived of the use of it for some time while awaiting adjustment of his claim for damages. Mr. Mushbach's automobile, which was occupied by his wife and three other persons, was struck at a street intersection and turned completely over, coming to rest with the wheels up. Mrs. Mushbach and another lady were badly bruised, but it is understood that their injuries are not serious.

Warden K. F. Roahen, of Peoria, Ill., recently had his automobile damaged to the extent of about \$200. The accident happened during the heavy traffic of Saturday afternoon on Michigan Avenue, Chicago. An automobile in the same line with Mr. Roahen stopped suddenly, and four cars, including his, piled up, all being badly smashed. Warden Roahen received only minor bruises, the steering wheel preventing his being thrown through the windshield.

Deputy Warden Jailed and Dropped.--Through the efforts of U. S. Game Warden Clarkson, U. S. Deputy Game Warden Patrick W. Logsdon, formerly of Williamsburg, Ky., was arrested on June 7 at Houston, Tex., while attempting to buy camp equipment on purported letters of authority to which he apparently had forged the signature of H. P. Sheldon, Chief U. S. Game Warden. Logsdon also had purchased supplies and equipment in San Antonio similarly. The Survey is advised that he is at present in jail and that the Department of Justice will commence immediate prosecution against him. All of the equipment fraudently purchased by him has been recovered. His appointment as federal deputy has been terminated "with prejudice."

Cases Terminated--Reports Received During May

<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Blackwell*	1	Illinois	Selling wild ducks	\$50 and costs of \$35
Carlock*	1	"	Possessing a wood duck	\$1 and costs of \$35
Hoffman	1	Alabama	Killing doves in close season	\$5
Mestel*	1	Illinois	Possessing killdeer	\$15 and costs of \$35
"	1	"	Hunting ducks prior to half an hour before sunrise	\$15 and costs of \$45
"	3	"	Hunting ducks after sunset	\$10 and costs of \$35 each
"	1	"	Killing a sandpiper	\$10 and costs of \$35
Riddick	2	Arkansas	Selling ducks	\$25 each
Riddick, Cummings**	1	"	Possessing wood ducks	\$10
Roahen	4	Illinois	Shooting at ducks from a motor boat	\$15 and costs of \$35 each
"	1	"	Hunting coots from a motor boat	\$10
"	2	"	Hunting ducks after sunset	\$10 and costs of \$35 each
"	1	"	Hunting ducks from a motor boat	\$50 and costs of \$35
"	1	"	Possessing a wood duck	\$25
Scholler*	1	"	Possessing a duck and 2 coots in close season	\$15 and costs of \$35
Shaver, Beals*	3	Minnesota	Hunting ducks after sunset	\$25 each
Shaver, Rogalla***	1	"	Attempting to kill ducks after sunset	\$5
Shreve*	1	Louisiana	Killing ducks in close season	\$10
Whitehead, King*	1	South Carolina	Hunting ducks after sunset	\$10
" "	1	" "	Shooting at and wounding two wood ducks	\$10
" "	2	" "	Hunting ducks in close season	\$10 each
" "	1	" "	Killing and possessing a wild duck in close season	\$10

* U. S. Deputy Game Warden

** Deputy State Game Warden

*** Cooperator

Cases Reported for Prosecution

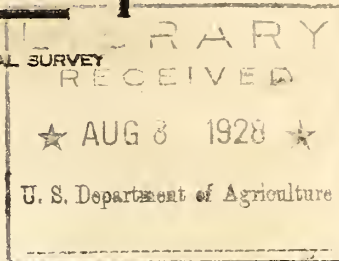
<u>Warden</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Barmeier, Steele*	3	Missouri	Killing ducks in close season
Clarkson, Adams*, Mrovka*	1	"	Possessing a wood duck
Mushbach, Carlock*	3	Illinois	Hunting ducks in close season
Roahen, Blackwell*	3	"	Selling ducks
Roahen, Carlock*	3	"	Shooting ducks after sunset
Roahen, Shaver	1	"	Hunting ducks in close season
Shaver, Harris*, Anderson*	1	"	Selling ducks
Shaver, Harris*, Anderson*	1	"	Possessing ducks in close season
Smith	2	Maine	Killing ducks in close season
Whitehead	20	Georgia	Killing and possessing robins
"	1	"	Possessing a heron
" Futch**	11	"	Killing doves prior to half an hour before sunrise
" Smith**	5	South Carolina	Hunting ducks from a motor boat

* U. S. Deputy Game Warden.

** Deputy State Game Warden.

THE SURVEY

ISSUED MONTHLY FOR THE PERSONNEL OF THE BUREAU OF BIOLOGICAL SURVEY
UNITED STATES DEPARTMENT OF AGRICULTURE



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No. 7

GENERAL NOTES

Chief's Trip Going Well.---A wire from Mr. Redington from Tanana, Alaska, dated July 18, showed that he was on scheduled time at that point and that all was going well.

To Conduct Game Survey.---Aldo Leopold, formerly of the United States Forest Service, was a recent caller at the Biological Survey. He has lately been employed by the Sporting Arms & Ammunition Manufacturers' Institute, of New York, to undertake a game survey, the purpose of which is to collect the experience and ideas of sportsmen and other conservation agencies regarding means to induce sustained production of game crops. It is hoped that by assembling dependable facts and making them available to conservation agencies, sportsmen, and landowners, the development of an effective program of game restoration will be stimulated. It is believed that the sportsmen, the landowners, the manufacturers of sporting equipment, and the public have an interest in the maintenance of a permanent game supply that can be made the basis of effective joint action when the essential biological, economic, and social facts are made clear. Mr. Leopold is well known as an effective advocate of game conservation. He wishes to enlist the cooperation of the Biological Survey in the undertaking and to obtain maps, publications, and special reports that will be helpful in making the proposed survey of game conditions.

New Clerk in Editorial Office.---Miss Alice W. Hall, of Breckenridge, Tex., has been appointed clerk-stenographer in the Editorial Office, effective July 3. Miss Hall comes to the Survey from the General Accounting Office.

Official Publications.---The following official publications of the Biological Survey were issued during the month:

Report of Conference of Field Representatives of the Division of Economic Investigations held at Ogden, Utah, April 23-28, 1928. 49 p., mimeographed. Issued July 6.

Raising Raccoons. Bi-216 (revised), 2 p., multigraphed. Received July 10.
Open Seasons for Game, 1928-29. Poster No. 47-Bi, compiled by Frank L. Earnshaw. Received July 20.

A Taxonomic Review of the American Long-tailed Shrews (Genera Sorex and Microsorex). North American Fauna No. 51, by Dr. Hartley H. T. Jackson. vi + 238 p., 13 pls., 24 figs. (including 19 maps). Received July 24.
Hints on the Care of Peafowl. Bi-266 (revised), 2 p., mimeographed. Received July 24.

Outside Publications.--The following articles by members of the Biological Survey appearing in outside publications have been reported during the month:

- Bailey, Vernon. Deer Investigations in Pennsylvania. The Game Breeder, vol. 32, no. 6, p. 163-165, 180-184, illus. June, 1928.
- Denmead, Talbott. Ducks and Dogs. Forest and Stream, vol. 98, no. 8, p. 472-473, illus. August, 1928.
- Dobyns, Harold W. Do Burrowing Owls and Coyotes Live in the Same Burrow? Murrelet, vol. 9, no. 2, p. 45-46. May, 1928.
- Earnshaw, Frank L. Game and Fish Laws (monthly department). Field and Stream, vol. 33, no. 3, p. 62-64, 103. July, 1928.
- Goldman, E. A. The Fluctuation of Game in Numbers. American Game, vol. 17, no. 4, p. 59-61, illus. June-July, 1928.
- Kellogg, Remington. An Apparently New Hyla from El Salvador. Proceedings Biological Society Washington, vol. 41, p. 123-124. June 29, 1928.
- Lincoln, Frederick C. Herring Gulls; A Correction. The Auk, vol. 45, no. 3, p. 366. July, 1928.
- Malloch, J. R. Notes on American Two-winged Flies of the Family Sapromyzidae. Proceedings U. S. National Museum, vol. 73, art. 23, p. 1-18. 1928.
- Three New Species of the Genus Pedinaspis (Hymenoptera: Psammodontidae). Proc. Washington Entomological Soc., vol. 30, no. 6, p. 100-102. June, 1928.
- McAtee, W. L. Neff on Oregon Woodpeckers; and Useful Birds of Florida. The Auk, vol. 45, no. 3, p. 404. July, 1928.
- Birds and Other Checks upon Insects. Scientific Monthly, vol. 27, p. 77-80. July, 1928.
- Mills, Ernest M. What to Do with the Crow. New England Homestead, vol. 96, no. 19, p. 4, illus. May 12, 1928.
- Murie, Olaus J. Spotted Sandpiper Escapes a Hawk. The Auk, vol. 45, no. 3, p. 371. July, 1928.
- Poole, Charles G. Records of a Predatory Animal Hunter. Monthly Bulletin, Dept. Agr. State of California, vol. 17, no. 5, p. 327-328. May, 1928.
- Preble, E. A. The Sportsman and the Woodcock. Nature Magazine, vol. 12, no. 2, p. 113, illus. August, 1928.
- Redington, Paul G. Wild Life Research and Our Waterfowl Situation. Fins, Feathers, and Fur, no. 60, p. 120-121, 134. June, 1928; Published also in The Fur Farmer Magazine, vol. 4, no. 10, p. 9, 21, 23. June, 1928.
- U. S. Bureau of Biological Survey. Americana Annual, p. 92-96. 1928.

BIOLOGICAL INVESTIGATIONS

Terns Banded on Massachusetts Refuges. --F. C. Lincoln spent several days early in July banding common and roseate terns on Penikese Island, a Massachusetts State bird reservation, and the summer home of a large colony of these birds. Severe northeast storms and high tides had destroyed large numbers of eggs and downy young, but in a day and a half he banded more than 1,200. This island is hilly and covered with a dense growth of grass that frequently stands 3 feet high, so it was a surprise to find the terns nesting over the entire island, even in the areas where the grass was most thick. After conference with bird-banding cooperators in Boston, Mr. Lincoln went to Chatham, Mass., in company with Dr. John B. May, State ornithologist of Massachusetts. At Chatham is located another reservation occupied by terns, and here two other cooperators had banded more than 5,000

young terns a few days earlier. But of even greater importance was the development of satisfactory methods for trapping the adult birds. Many terns banded at this colony, as young, two or three years ago, have been retaken.

Studies Waterfowl in Canada.--Dr. H. C. Oberholser spent about three weeks during July studying waterfowl in Canada. In addition to field observations of waterfowl conditions, he held conferences with Canadian officials regarding organization features in the interest of the waterfowl census, which is being conducted in cooperation with Canada.

Seek Method of Destroying Moles in Runway.--Theo. H. Scheffer during June, in cooperation with T. E. Carlough in charge of the Eradication Methods Project, conducted a series of experiments to determine a practical method of destroying moles in their runways by the injection of gas. The results, however, were not entirely satisfactory because of the difficulty of locating the particular part of the runway that is occupied by the animal at the time. The same difficulty has been encountered in attempts to deal with pocket gophers by this method. Other activities included continued studies of the effect of moles and rodents on bulb-growing. The principal areas in the Bellingham, Lynden, and Mount Vernon districts were inspected. Arrangements were also made for the preservation of a series of stomachs of seals shot in the Bay View section.

Taylor Moves to University.--Dr. W. P. Taylor, on the invitation of Pres. Byron Cummings, has moved his office to Agriculture Hall, at the University of Arizona. In view of the greatly improved laboratory and library facilities now afforded, he confidently expects this move to result in more effective operations. Several days toward the latter part of June Doctor Taylor devoted to an investigation of conditions with reference to the proposed introduction of elk in the Chiricahua Mountains, and to studying experimental quadrats at the Santa Rita Range Reserve.

Scientists to Study Wild Life of Grand Canyon.--At the request of Dr. Stephen T. Mather, director of the National Park Service, arrangements have been made for Vernon Bailey to join a party of scientists who will undertake to correlate the present animal and plant life of the Grand Canyon National Park, Ariz., with geological formations and fossil remains of the former life of that region. This investigation is being made as a basis for the educational work of the National Park Service and is a part of a far-reaching effort that is being launched to obtain and place at the disposal of the public reliable information regarding the natural educational features and attractions offered by the national parks. Organizations other than the Biological Survey cooperating in this study include the National Research Council, the National Academy of Sciences, the Carnegie Institution, the American Association of Museums, and several others. It is expected that a wealth of interesting information will be obtained as a result of this joint effort on the part of leading research and educational workers that will enable the people who visit the parks to get a better grasp of the meaning of those natural features that are being preserved in these great public playgrounds, and to gain the utmost enjoyment and profit from contact with them.

To Lecture at Johns Hopkins.--A. Brazier Howell, formerly a collaborator and scientific assistant in Biological Investigations and author of two numbers in the North American Fauna series, has recently been appointed lecturer in comparative anatomy in the Department of Anatomy at Johns Hopkins Medical School, Baltimore.

Abroad for the Summer.--Mrs. Jane S. Elliott, draftsman in this division, sailed with her daughter on June 30 on the Ile de France for Havre, France. She planned to spend about 10 days in Paris and then go, possibly by air, to London, where she will visit her brother and from there take a two weeks' motor trip through England. Mrs. Elliott expects to return to the United States on the America on August 16.

FOOD HABITS RESEARCH

Inspects Michigan Wild-Fowl Area.--During the latter part of June, Mr. McAtee made an inspection of the St. Clair Flats Shooting and Fishing Club near Detroit, Mich., for the purpose of making recommendations for its improvement as a ducking area. This one of the few important wild-fowl areas that he had not personally visited. A great variety of food plants were found growing in the area, and recommendations for additional plantings were restricted to two species.

Visits Game Farm, and Inspects Sapsucker Damage.--Mr. McAtee also visited the Wallace Evans Game Farm at St. Charles, Ill., to learn the year's progress in the industry conducted there, and near Oregon, Ill., he inspected a local forest area in which sapsuckers had been particularly destructive to Scotch and Austrian pines. White pines, which appeared to be less attractive to sapsuckers, were being introduced to supplant the foreign species.

Upper Mississippi Refuge Plant Survey Continued.--F. M. Uhler has begun his season's work on the Upper Mississippi River Wild Life Refuge, where, it is hoped, the survey of aquatic plants will be completed this season. With him is Herbert W. Graham employed temporarily for the summer to assist in the work.

FUR RESOURCES

Detained at Rabbit Station.--Mr. Ashbrook has been detained on his field trip to the Rabbit Experiment Station at Fontana, Calif., longer than was anticipated, but he is expected to leave Fontana about August 1. The resignation of D. Monroe Green as director of the station has been accepted effective June 1.

To Build New Furring Pen for Foxes.--Dr. Karl B. Hanson has ordered a quantity of woven wire for the purpose of constructing a new furring pen at the Fur Animal Experiment Station. He expects to have it ready for use this fall for making certain studies of the development of the quality of pelts under varying conditions.

Large Attendance at Meetings of Fox Breeders.--Dr. Earle Dewey, engaged in the study of diseases of fur animals, reports unusually large attendances with active enthusiasm at the meetings of fur farmers at Sheboygan, Wis., Minneapolis, Minn., and Ames, Iowa. Publications from the division were in great demand at these meetings.

Will Attend Veterinary Meeting.--Dr. Karl B. Hanson and Dr. J. E. Shillinger will attend the meeting of the American Veterinary Medical Association in Minneapolis, August 7 to 10.

ECONOMIC INVESTIGATIONS

Serious Mouse Infestation in South Dakota.--Louis Knowles, leader of predatory-animal and rodent control in the South Dakota district, reports that a serious field-mouse infestation occurred in Jones and Lyman Counties, S. Dak., during June. Investigation showed that mice were distributed over the greater part of these two counties from near Okaton, on the west, to Reliance, on the east, a distance of about 100 miles, and were responsible for destroying planted seed corn. In many fields two plantings had been made and all seed placed had been destroyed. The services of the Biological Survey were offered to county officials to cooperate in the control of the mice, and the commissioners of Jones County created a fund for the work. Wallace W. Smith, junior biologist of the Bureau, who was placed in charge, prepared the poisoned grain and gave field demonstrations in its use, assisted by W. B. Elley, assistant leader of predatory-animal control. Poisoned-wheat bait, in the proportion of 2 ounces of strychnine to 1 bushel of wheat, was used, and Jones County adopted the plan of selling the prepared bait to the farmers at cost. In the two counties it is estimated that fully 40,000 acres planted to corn this season will be without crop or will have thin stands, or stands that come from a third planting made during the last week of June, which has less chance of maturing. A total of 175 bushels of poisoned grain were exposed on about 22,000 acres, and wherever it was put out on infested areas, practically all the mice there were killed during the first night. On a sample plot of about 30 acres, which had been twice planted to corn, 2,154 poisoned mice were picked up. These were all white-footed mice, except 12, which were house mice.

Tacoma Rat Campaign in Full Swing.--L. K. Couch, leader of rodent control in the Washington district, reports that the rat campaign in Tacoma is progressing along well-planned lines. The waterfront docks are almost entirely free of rats--for the first time since they were introduced into the city. Property owners are voluntarily cooperating. The mayor has drawn up along suggested lines a new garbage-disposal ordinance, which will be of permanent help in handling the rat situation.

Rats Destroy Chickens.--L. C. Whitehead, leader of rodent control in the Texas district, states that an express agent at Lampasas, Tex., reported that while absent from home for an hour to meet a train, rats got among his six-weeks-old baby chicks and killed 100 of them.

Talks on Pocket Gophers to School Children.--Mr. Whitehead also reports that during April Donald A. Spencer, junior biologist, gave talks at 33 schools with an audience of 2,624 children and 106 teachers; held 11 night meetings with an attendance of 940 adults; and conducted 28 field demonstrations on poisoning and trapping pocket gophers.

Oregonians Are Cooperators, Says Jewett.--S. G. Jewett, leader of predatory-animal control in the Oregon district, states that he continues to receive excellent cooperation from the county officials, associations, and stockmen. Never, he says, has there been so little complaint of depredations by predatory animals as during the past three months. Destructive animals, principally coyotes, continue to exist in practically all parts of

the Oregon district, but apparently in smaller numbers than at any time since the organized campaigns were put into effect.

Coyotes Kill Lambs in Washington.--Dr. G. R. Bach, leader of predatory-animal control in the Washington district, writes of a report from Port Discovery, Clallam County, that 11 lambs were destroyed by coyotes on June 26. Agent L. L. Englund investigated the matter on June 29 and placed seven traps, and the following morning trapped a coyote. No further losses have been reported.

Record Year for Hunters.--Doctor Bach also reported that more animals were taken during the fiscal year just ended by his salaried hunters than in any previous year in the Washington district. His hunters accounted for 3 cougars, 31 stock-killing bears, 179 bobcats, and 3,406 coyotes, by sending in either the skins or the scalps of all animals for which they received credit. Reports were received of large numbers of coyotes found dead on the ranges in the vicinity of poison ranges that were neither skinned nor scalped and evidently had not been found by the hunters.

Prairie-Dog Work in New Mexico Bringing Good Results.--A. E. Gray, leader of predatory-animal and rodent control in the New Mexico district, advises that favorable weather and good cooperation resulted in treating 113,869 acres of prairie-dog-infested land during June. This is the largest acreage treated in the State in any month since 1923. Except in De Baca County, poisoned steam-rolled oats and pre-bait were used rather than maize, with good results.

New Hunter Sees Fast Fight.--Mr. Knowles sends in the following report made by W. B. Elley, assistant leader in the South Dakota district, concerning the work of Ben Kroll, who began his first work as a hunter at the State Antelope Park, Harding County, on June 1:

"We received a call the first of June from the keeper of the State Antelope Preserve to send a hunter there, as he was having trouble with a pair of coyotes inside the preserve. Ben Kroll was hired for the work and spent the first two days on the top of a high butte in the center of the preserve, called Antelope Butte, watching the maneuvers of the pair of coyotes that he soon located. By the use of field glasses he could get a good view of everything they did. I will try and give what he saw as nearly as I can. Toward evening two coyotes came out of a brushy draw and started working up wind to where a small bunch of antelope were lying down. When the coyotes were within about a hundred yards, they began to separate and work back and forth hunting. The old antelope began to get very nervous and occasionally one would whistle. Several bucks at once came to the bunch and began to chase the coyotes and strike them with their forefeet. The coyotes would dodge the attack and then make a run at the antelope, but the latter would outrun them. As soon as the antelope let up their attack, the coyotes would go hunting again and this would start the antelope to fighting once more. The antelope finally drove the coyotes away. The fight was too fast to venture a shot for fear of hitting an antelope.

"Along the latter part of the evening of the second day one coyote came out to a spot where three female antelope had been for the past two days,

with young hidden close by. This coyote tried to hunt out one of the young. There were only three old ones this time to do the fighting. When the old coyote got too close, first one and then another of the antelope would make a mad rush. Several times in dodging, the coyote had to roll over to keep from being cut to pieces by the sharp feet of the antelope. The fight lasted for about half an hour before the coyote was driven away, and while it lasted it was not safe to risk a shot at the coyote.

"The next day I was with Mr. Kroll, and after a short time we located the den not over 60 rods from where he had witnessed the two fights. We got one of the keepers to help dig out the den, and in it were found the remains of three young antelope and the wings and feathers of a number of sage hens and grouse, scattered about near the part where the pups were. We got out six pups and upon examining their stomachs found them to be full of the flesh of young antelope. Traps were placed for the old ones. The next day Mr. Kroll shot the male coyote, and when we examined his stomach we found it full of sage-hen eggs--over a quart of them. The old female got out of the preserve and had not returned when I left.

"While I was at the preserve I saw about 75 little antelope. There were a number of twins and one bunch of triplets. I watched the old one hide them, and when she had gone I tried for an hour to find them but had to give it up. Then both the keeper and I made another hunt, but failed. The little ones are concealed in cactus patches, where it is very difficult to get to them. The old mother antelope feeds the little fellows about every three hours, staying with them not over ten minutes at a time. As soon as they are through feeding they are hidden and the old one leaves them."

Liquid Cyanide Used on Rats at Tacoma.--F. E. Garlough, in charge of the Eradication Methods Project, reports the following experiment conducted at Portland, Oreg., with the use of liquid cyanide in destroying rats. This poison was applied in measured dosages to rat burrows and beneath floors by means of an automatic nozzle attached to a pressure cylinder containing the liquid cyanide under 60 to 90 pounds pressure. At one place along the waterfront, 10 cc. dosages were used for the openings among the rocks and in the burrows in the ground. One old female rat ran out of a burrow and into another that had just been treated, where it was likely killed, and several young rats followed her and died on the surface. Another old rat came to the surface and died at the exit. At the Washington State Hospital farm four applications of 10 cc. each were made under a platform 20 feet square upon which hogs were being fed. A few minutes afterward the platform was moved and 22 grown rats were found dead on the ground, and in a nest were 10 very small ones that were dead or dying.

Porcupine Bounties in Maine.--According to information received from E. M. Mills, of the Eastern Rodent Control District, bounties were paid on porcupines in Maine in 1903 in the amount of \$19,946, and in 1904, \$17,027. No bounty was paid thereafter until the new law went into effect on July 16, 1927. From then until January 1, 1928, \$6,614.25 was expended, at the rate of 25 cents each, which represents 26,457 porcupines. This money is paid by the towns, which are reimbursed annually in December by the State.

Hunter Bitten by Rattlesnake.--Hunter John Q. Williams, of the California district, was recently bitten by a rattlesnake while tending his lines, but fortunately has now almost recovered and is again on the job.

Coyotes Scare in Control Areas.--L. J. Goldman, leader of predatory-animal control in the Idaho district, reporting on work carried on during the fiscal year just closed, states that "wherever operations were conducted coyotes are reported to be scarce and livestock losses small. In certain sections where no cooperation was had and no work carried on, coyotes are plentiful. Properly organized local cooperation conducted under the right system will take care of predatory-animal control in Idaho." Mr. Goldman also reports active cooperation with several local stockgrowers' associations, among which the Cache Woolgrowers Association has levied 7 1/2 cents a head on sheep to raise funds for cooperative control work.

Ogden Conference Report Mailed to Field Leaders.--Mimeographed copies of the report of the conference of the field men of this division held at Ogden, Utah, during the latter part of April were mailed to the field leaders and their assistants on July 11. If any leader or assistant leader fails to receive his copy and will so notify the Washington office, a duplicate will be mailed.

Resignation.--Odom Stewart, who has been connected with the Eastern Rodent Control District since September 6, 1927, has resigned, effective August 1, to accept a position with the University of Tennessee.

IMPORTATIONS

Rare Birds Imported.--Among the rarer birds imported during the month were two shoebill storks, which arrived at New York on June 1 from Soudan, Africa, and 10 Malay lorikeets, which arrived at San Francisco about June 24 from Japan. One gorilla from Africa was also brought in at New York on July 9.

Takes Over Work at New York.--W. DeWitt Miller took over the work of inspection of foreign birds and mammals at the port of New York on July 2, relieving B. S. Bowdish, who has been inspecting shipments at that port since November last.

Inspector Visits Bureau.--Mrs. Mary Ella Davidson, of the California Academy of Sciences, and one of the Bureau's inspectors of foreign birds and mammals at the port of San Francisco, was a visitor in offices of the Survey on July 18 and 19.

GAME AND BIRD CONSERVATION

Hunting Regulations Amended.--The amended migratory-bird treaty act regulations as approved by the President on July 13 establish the period from October 1 to January 15 for the hunting of migratory waterfowl in Barnstable County, Mass., south and east of the Cape Cod Canal, thus conforming with the open season in Dukes and Nantucket Counties; an open season on mourning doves in Georgia from October 16 to January 31, conforming with the State season; and a split season on mourning doves in Louisiana from September 1 to 30 and from November 20 to January 31. In addition, a general readjustment of the open seasons on woodcock has been made, with a reduction in the

hunting period to one month. The periods during which woodcock may be hunted during the approaching open season are as follows:

In Maine, Vermont, and North Dakota from October 1 to October 31;

In New Hampshire, Massachusetts, Rhode Island, and Connecticut from October 20 to November 19;

In New York, New Jersey, Pennsylvania, Ohio, Indiana, Michigan, Wisconsin, and Iowa from October 15 to November 14;

In Maryland, the District of Columbia, and Missouri from November 10 to December 10;

In Delaware, Virginia, West Virginia, Kentucky, Arkansas, and Oklahoma from November 15 to December 15; and

In North Carolina, South Carolina, Georgia, Alabama, Mississippi, and Louisiana from December 1 to December 31.

Information obtained from inquiries and investigations indicate that, taking its range as a whole, the woodcock is decreasing in numbers. Readjustments in the Federal seasons on this species have been worked out so that there is a minimum of conflict with State laws on the subject and in most instances the seasons will open simultaneously with or later than the State seasons on quail and other upland species.

Forger Gets Year in Jail.--The case against Patrick W. Logsdon, former U. S. deputy game warden, who was arrested at Houston, Tex., on June 7 while attempting to buy camp equipment on purported letters of authority to which he had forged the signature of H. P. Sheldon, was terminated in Federal court on June 15. Three counts of impersonating a Federal officer were brought against Mr. Logsdon, and he plead guilty to all three. He was given a year in the Galveston County jail on the first count, and three years in the penitentiary on the second and third counts, which were to run concurrently. The penitentiary sentence was suspended indefinitely on good behavior.

Canadians Hold Game Conference.--A conference of Dominion and Provincial game officials was held recently at Ottawa on invitation of the Minister of the Interior, at which all the Provinces and several Federal departments were represented. The program included matters of interest to all Canada connected with the administration of the Dominion's resources of fur, game animals, and birds, says a bulletin of the American Game Protective Association. Conclusions arrived at were expressed in the form of resolutions. A complete biological survey by Provincial and Dominion Governments and Canadian universities was urged. Dominion-wide prohibition of the sale of game was declared desirable. The provincial licensing of all hunters was recommended, with the provision that all licensees be required to report the numbers of each kind of game killed. The formation of a Dominion Game Protective Association, to the end that there should be a well-balanced general program of game conservation for the entire country, was advocated.

Draining of Cheyenne Bottoms Opposed.--The district court at Great Bend, Kans., in June denied both the State of Kansas and the City of Hutchinson permission to intervene in the suit to create a drainage district in the Cheyenne Bottoms, which had recently been requested by persons who own more than half the land in the proposed area. Both sought permission to enter the suit in opposition to the drainage proposal and thereby join the

majority of the landowners in the proposed district who also are against it. It is understood that the landowners opposed to the undertaking outnumber those who are trying to drain the land about five to one, although they own less than half the land, and that they intend to oppose vigorously the drainage project. The area in question comprises about 18,000 acres. It is estimated that more than 20,000 acres of land in the bottoms are now covered with water. Ducks are making it their headquarters as they did last year, and thousands of young ones have been hatched there this summer.

Fined for Trapping Ducks.--Three residents of Crisfield, Md., apprehended on January 11, 1928, by Federal and State game wardens in Somerset County, Md., while trapping wild ducks, were arraigned in Federal court at Baltimore on May 8, where they entered pleas of guilty and received fines of \$50 each.

Visiting Western Reservations.--Ernest P. Walker, assistant in reservations administration, left on July 16 for the West, where he will visit the five Federal big-game preserves and some of the bird refuges.

Utah Men to Head Bear River Refuge.--David H. Madsen, State fish and game commissioner of Utah, has been appointed superintendent of the new migratory-bird refuge authorized to be established at Bear River Bay, Utah, under the Bear River migratory-bird refuge law enacted by the last Congress. Mr. Madsen was formerly president of the Western Association of Game Commissioners and has been prominently identified with the conservation of wild life for many years. Fully familiar with wild-fowl conditions in his State, he has been one of the strongest advocates for the reflooding of the Bear River marshes and the creation of a refuge there as a means of preventing the annual mortality of birds in the region. Mr. Madsen entered upon his new duties on July 2.

The construction and engineering work necessary for the reflooding of Bear River marshes, as provided by the act, will be performed under the direction of L. M. Winsor, formerly engineer of the Bureau of Public Roads, stationed at Logan, Utah. Mr. Winsor, who has been transferred to this Bureau, has been engaged for a number of years on irrigation projects in the West and through his long experience in the Division of Agricultural Engineering of the Bureau of Public Roads is well fitted for the work. During the summer of 1927 he made a careful study for the Biological Survey of conditions at Bear River Bay.

Mr. Madsen, Mr. Winsor, and Rudolph Dieffenbach, land valuation engineer, of the Winona, Minn., office, were in Washington early in July to confer on matters pertaining to the establishment of the Bear River Refuge. Mr. Madsen and Mr. Winsor have returned to Utah.

Big-Game Animals at Bison Range.--The buffalo calf that was raised at the Bison Range last year by a Jersey cow has thrived better than any of the other calves running with their mothers in the buffalo herd. This animal prefers to stay with the domestic cows at headquarters and has not shown any inclination to go off with the buffalo herd.

A pet elk at this preserve is very tame and will come when called and enjoys being petted. He runs on the range and mixes to some extent with the other elk but is usually back close to headquarters each morning and evening.

Although the animal is three years old and had six-point antlers last year and again this year, he does not appear to be fully mature, but is noticeably smaller than many of the bulls on the range.

The mountain sheep fed at the substation have become quite tame.

Twenty-three buffalo have been shipped from the Bison Range to Alaska for liberation in the region of Fairbanks. The stocking of this locality with buffalo is being carried out by the Alaska Game Commission under funds appropriated by the 1927 Territorial legislature. R. A. Perkins, representing the Alaska Game Commission, accompanied the buffalo on their journey to the Territory.

During April, May, and June 1,552 persons visited the Bison range to see the buffalo during the time that they were confined to the corrals for spring feeding.

Turkeys Control Insects at Bison Ranges.--Grasshoppers have not become abundant on the Bison Range yet this year, probably because of the flock of turkeys that ranged there last summer, or to an adverse season, or both. If the insects appear in damaging numbers, an effort will be made to bring back the turkeys. Mormon crickets have not reached the Bison Range this year, and since the raising of turkeys on a large scale has become an industry in the locality, these insects too appear to be under control.

Birds Scarcer at Nine Pipe and Vicinity.--One white pelican was seen on Nine Pipe Reservoir, Mont., this spring, two pairs of upland plovers have been seen on the Bison Range, and one pair near Kicking Horse Reservoir. Fewer individuals were seen this spring than a year ago.

High Water at Big Lake.--L. L. Bryan, protector of Big Lake Bird Reservation, Ark., reports that the southeastern part of Missouri in the region of the refuge is more heavily damaged this year by floods than during the flood period of last year. Mr. Bryan visited the northern part of the refuge on July 2, and the water then had risen to the tops of the trees. At the southern end of the refuge the country was covered with water between the levees, and the residents were working hard to control it. On July 5, the water was 5 feet deep at the warden's camp and was up to the top of the levees east of the camp. Latest reports from Mr. Bryan state that the water had fallen a little more than a foot by July 7.

Pelicans Hatching at Lake Malheur.--Geo. M. Benson, protector of Lake Malheur Reservation, Oreg., states that pelicans were recently hatching and he believed that the young would be successfully raised there for the first time in four years. He also reports that the weeds are beginning to grow in the lake and that plenty of food is in prospect for the birds in the fall.

Dr. L. E. Hibbard, formerly supervisor of Lake Malheur Reservation, with his son and a party of friends, visited the refuge on June 11 and 12 and made an extended trip out on the lake.

New Fence Completed at Elk Refuge.--On June 12, the construction of 5½ miles of fence was completed at the Elk Refuge, Wyo.

Sullys Hill and Stump Lake Notes.--Three young buffalo calves and four young elk calves are at Sullys Hill Game Preserve, N. Dak. Five young

wild geese are doing well in a pen near headquarters, and there are at least 30 young mallards on the small lake within the reservation.

The strongest windstorm that has occurred at Sully Hill and vicinity in many years passed over that part of North Dakota early in the morning of July 6. Several trees were blown down, and not far from the preserve many buildings were destroyed and numbers of stock killed.

A refreshment stand within Sullys Hill Game Preserve, N. Dak., has been opened by a resident of the locality for the accommodation of visitors. Permission for its operation was granted by the National Park Service and the Biological Survey. During June, 4,822 persons visited the preserve.

The fence on the west peninsula at Stump Lake Bird Refuge, N. Dak., has been moved to a new location in order to conform to a recent survey. Many gulls, cormorants, and some ducks were nesting on this refuge in June. The water level of the lake has not dropped lower than it was last year.

Appointed Abstractor.--Harold B. Fitzsimmons has been appointed abstractor in the Winona office.

Treaty-Act Cases Terminated--Reports Received During June

<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Barmeier, Mrovka, Ferrier*	2	Illinois	Killing redhead ducks	\$15 each and costs of \$45 each
Blackwell*	2	"	Selling wild ducks	\$15 each and costs of \$35 each
Bloxsom, Ruark**, Kelly**	3	Maryland	Trapping wild ducks	\$50 each
Carlock*	1	Illinois	Killing wild ducks in close season	\$15 and costs of \$35
Eckert**	1	Massachusetts	Shooting a sea gull	\$25
Goodwin*	1	"	Killing a yellowlegs	\$25
Mushbach, Carlock*	1	Illinois	Killing ducks in close season	\$25 and costs of \$70
" "	1	"	Killing ducks in close season	\$20 and costs of \$70
Riddick, Denton**	2	Arkansas	Possessing a wood duck and a gull	\$10 each
Roahen	1	Iowa	Killing and possessing wild ducks in close season	\$20
Roahen, Blackwell*	2	Illinois	Selling wild ducks	\$15 each and costs of \$35 each
Roahen, Hess**	1	"	Killing ducks prior to $\frac{1}{2}$ hour before sunrise	\$5
Roahen, Hess**, Huff**	2	"	Hunting ducks prior to $\frac{1}{2}$ hour before sunrise	\$5 each and costs
Roahen, Hess**, Lee**	2	"	Hunting ducks prior to $\frac{1}{2}$ hour before sunrise	\$5 each and costs
Roahen, Hess**, Lee**, Huff**	2	"	Hunting ducks prior to $\frac{1}{2}$ hour before sunrise	\$5 each and costs
Roahen, Huff**	1	"	Hunting ducks prior to $\frac{1}{2}$ hour before sunrise	\$5
Shaver	1	Minnesota	Selling ducks as part of meal	\$10
Shaver, Beals**	1	"	Hunting ducks after sunset	\$5
" "	1	"	Killing and possessing wild ducks in close season	\$10
Shaver, Rogalla***	1	"	Hunting ducks after sunset	\$5
Steele	1	Kansas	Hunting ducks after sunset	\$5
"	1	"	Killing 3 yellowlegs	\$5
Whitehead	1	Georgia	Possessing robins	\$5
"	1	"	Killing mourning doves	\$10
"	1	"	Hunting mourning doves	\$5
Whitehead, Curl**	1	"	Possessing 3 wood ducks	\$10
Whitehead, Hartley*	1	"	Killing doves in close season	\$5
" "	2	"	Killing doves in close season	\$1 each
Whitehead, Maddox**	1	"	Killing a robin	\$2
Whitehead, Woods**	1	"	Killing a nighthawk	\$2

Cases Reported for Prosecution

<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Barmeier, Neiderbrach**, Phillips**	1	Missouri	Hunting ducks in close season
Blackwell*	1	Illinois	Selling ducks
Charlton, Hanes*	1	Ohio	Possessing a heron
Farnham, Sutherland**, Anderson**, White**	3	New York	Hunting ducks from a motor boat
Gieseler*	2	Illinois	Hunting ducks in close season
Holland*	1	Louisiana	Killing a heron
Riddick, Priest**	2	Oklahoma	Hunting ducks from a motor boat
Roahen, Taylor***	1	Illinois	Selling ducks
Shaver, Brown*	1	Minnesota	Possessing ducks in storage in close season
Shaver, Lawrence*	1	Iowa	Hunting and possessing ducks in close season
Steele, Yowell**	1	Kansas	Shooting and possessing an egret

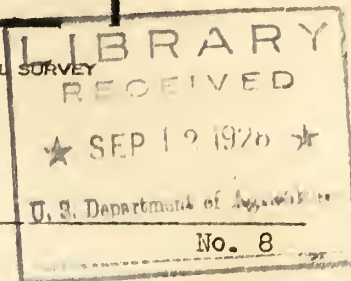
* U. S. Deputy Game Warden.

** Deputy State Game Warden.

*** Cooperator.

THE SURVEY

ISSUED MONTHLY FOR THE PERSONNEL OF THE BUREAU OF BIOLOGICAL SURVEY
UNITED STATES DEPARTMENT OF AGRICULTURE



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No. 8

GENERAL NOTES

Chief on Return Trip.--A wire of August 20 from Mr. Redington at Juneau, Alaska, advises that he expected to be in Seattle, Wash., by August 27. There he will attend the annual conference of the International Association of Game, Fish, and Conservation Commissioners, and will return to Washington early in September.

Mr. Redington Visited Office in August.--The apparently unannounced and premature return of the Chief from Alaska on August 9 caused a decided surprise throughout the Bureau. Conducted from office to office and introduced by Mr. Henderson, he greeted all members of the Survey and in a very natural way asked how things were going. Nearly everyone was deceived at first and some had to have it explained that this Mr. Redington was the Chief's twin brother, John, from Chicago. The visitor apparently enjoyed his temporary chieftainship as much as did Mr. Henderson, and the impersonation probably worked just as successfully as it may have when they were boys. John C. Redington is director of commercial research of a valve bag corporation, of Chicago.

Abstract of Fur Laws Issued.--An "Abstract of Fur Laws (Seasons) for 1928-29" was issued on August 14 in mimeographed form preliminary to the issuance of the annual Farmers' Bulletin on the fur laws. This advance information was prepared chiefly for fur-trade periodicals and the use of fur houses for inclusion in their catalogues for the coming trapping season, which go to press before the fur-law bulletin appears. In its field this preliminary abstract of the fur laws serves the same purpose as the annual poster tabulating the open seasons for game, which has already been reproduced by photo-engraving process in several of the outdoor and sporting periodicals. Copies of the fur-law abstract may be obtained on request to the Biological Survey.

Outside Publications.--The following articles by members of the Biological Survey appearing in outside publications have been reported during the month:

- Cox, William T. When Forest Fires Began. American Forests and Forest Life, vol. 34, no. 416, p.477-479, illus. August, 1928.
- Dennead, Talbott. The Timberdoodle. Maryland Conservationist, vol. 5, No. 3, p. 10-11, illus. Summer Issue, 1928.
- Just Fishin'. Hunter-Trader-Trapper, vol. 57, p. 10, illus. September, 1928.
- Earnshaw, Frank L. Hunting and Fishing on Private Premises--Department of Game and Fish Laws. Field and Stream, vol. 33, no. 4, p. 52-60. August, 1928.
- Waterfowl and the Federal Regulations--Department of Game and Fish Laws. Field and Stream, vol. 33, no. 5, p. 64-66. September, 1928.

- Gabrielson, Ira N. The Season: Birds of the Oregon District. Bird-Lore, vol. 30, no. 4, p. 278-279. July-August, 1928.
- , Camp Robbers. Four L Lumber News, vol. 10, no. 22, p. 10, illus. August 1, 1928.
- Garlough, F. E. Rodent-Control Investigations in California. Monthly Bulletin Department of Agriculture of California, vol. 17, no. 7, p. 406-412. July, 1928.
- Jackson, H. H. T. Review of Anthony's "Field Book of North American Mammals"; and Review of Finleys' "Wild Animal Pets." Journal of Mammalogy, vol. 9, no. 3, p. 257-258. August, 1928.
- Lincoln, Frederick C. Bird Banding in Japan. Bulletin Northeastern Bird Banding Association, vol. 4, no. 3, p. 93-95. July, 1928.
- McAtee, W. L. Flying Cafeterias. Nature Magazine, vol. 12, no. 3, p. 171-172. September, 1928.
- McAtee, W. L., and J. R. Malloch. Thyreocorinae from the State of Parana, Brazil (Hemiptera: Pentatomidae). Annales Musei Zoologici Polonici, vol. 7, p. 32-44. April, 1928.
- Redington, Paul G. Wildlife Research and Our Waterfowl Situation. Maryland Conservationist, vol. 5, no. 3, p. 7-9. Summer Issue, 1928.
- Taylor, W. P. [and W. G. McGinnies]. The Bio-ecology of Forest and Range. Scientific Monthly, vol. 27, p. 177-182. August, 1928.
- Walker, Ernest P. Getting Public Support for Mammal Protection. Journal of Mammalogy, vol. 9, no. 3, p. 195-200, illus. August, 1928.

BIOLOGICAL INVESTIGATIONS

Fire Threatens Reindeer Station.-- Mr. Redington and L. J. Palmer report that early in the month a bad forest fire for a time threatened the Reindeer Experiment Station buildings at Fairbanks, Alaska, and that it destroyed reindeer forage valued at approximately \$12,000. Mr. Redington authorized the employment of fire fighters and the use of a tractor and grader to establish sufficient fire lines, and as a result the fire was finally stopped. It is reported that this was the worst fire season in that region in many years.

Tower Fails to Attract Bats to Orchard.--Theo. H. Scheffer recently investigated the bat situation in the Yakima, Wash., orchard district, where in an unsuccessful attempt to combat the codling moth, one orchardist constructed and baited a bat tower at a cost of \$2,000. There was no evidence that bats had visited the tower since its construction during the past winter, and attempts to establish bats brought there from remote caves in the foothills proved unsuccessful, as the animals soon after disappeared.

Mr. Scheffer reports pocket mice less abundant than formerly about the experiment station premises at Lind, in the dry wheat belt of the Big Bend country. He recently gave an illustrated lecture on beaver conservation at Huntingdon, British Columbia, before a joint meeting of Canadian and American members of the Pacific Northwest Bird and Mammal Society.

Attends Conference on Grazing Research.--Dr. Walter P. Taylor during the month of July visited the Great Basin Experiment Station, at Ephraim, Utah, where he went over the Forest Service experimental plots with the station director, C. L. Forsling, and studied the relation of rodents to grazing conditions, particularly as a factor affecting results on the plots. He reports that the

effects of rodent grazing on the famous Alpine erosion experiment at this point recently became so severe that it was necessary to trap rodents to conserve the values of the experiment, an indication of the potential damage by rodents to forage cover, soil, and watershed.

A trip to the summit of Pikes Peak afforded opportunity for observation of the animals and life-zone conditions of this region. At a conference on grazing research held at the Alpine Laboratory of the Carnegie Institution of Washington, Doctor Taylor stressed the necessity of full consideration of the animal factor as a basis for adequate treatment of range problems, the importance of which in ecology and range research has been overlooked. In returning to his headquarters at Tucson, he stopped at Albuquerque, N. Mex., for conference with Forest Service and Bureau representatives.

Returns from Grand Canyon.--Vernon Bailey reports a most interesting period spent at the Grand Canyon of Arizona during July and August. The trip to this point was arranged on invitation of the National Park Service and the Carnegie Institution in connection with a far-reaching educational program that is being carried on through the cooperation of these agencies and the National Research Council, the National Academy of Sciences, and the Laura Spelman Rockefeller Memorial Foundation. Effort is being made to coordinate the present animal and plant life with topographical, geological, and other features of the Grand Canyon, and to bring together information of interest and educational value to those visiting this and other national-park areas. Mr. Bailey made many interesting observations regarding the animal life of the region, including the deer, antelope; mountain sheep, various rodents, and reptiles. He prepared a life-zone map showing in a graphic way the relation of the plant and animal life to climatic conditions at the various altitude levels occurring in the canyon. He was able to arouse much enthusiasm on the part of the park rangers and those visiting the park at the time in the important opportunities afforded by the Grand Canyon National Park for studying the natural history of animals living there. Rangers were given training in trapping and methods of preparing specimens for exhibition at the local museum, and in capturing and handling live animals, and were shown the ease with which even such animals as the porcupine can be rendered unafraid and of exceptional interest to visitors.

Oberholser on Northern Field Trip.--Dr. H. C. Oberholser during the latter part of July made a trip to points in Ohio, Wisconsin, Minnesota, and Iowa, in the interest of the waterfowl censuses and took part in the sessions of the American School of Wild Life Protection at McGregor, Iowa. Following his return he left early in August for points in the New England States and eastern Provinces of Canada and Newfoundland, for conference with officials and others interested in the waterfowl censuses. Study will also be made of field conditions as a basis for interpreting the reports from cooperators taking part in the work.

Shrew Fauna Published.--"A Taxonomic Review of the American Long-tailed Shrews (Genera *Sorex* and *Microsorex*)" is the title of North American Fauna No. 51, by Dr. Hartley H. T. Jackson, which was issued on July 24. This publication gives the results of an intensive study of 10,431 specimens of American long-tailed shrews, chiefly in the collection of the United States National Museum, including the Merriam and the Biological Survey collections. The author recognizes 89 forms of 39 species of the genera *Sorex* and *Microsorex*, and in addition to the taxonomic review of each of these forms, gives valuable information

regarding the distribution and habitat, habits, food, and economic status, and other points in the life history of these animals. Among the species of long-tailed shrews are the smallest of American mammals, and even the larger forms are no bigger than some of the smaller species of mice. The smallest American shrew, which may also be the smallest mammal known, is the Winnemana pigmy shrew, the type specimen of which was collected by Edward A. Preble 25 years ago on the Virginia side of the Potomac River, 4 miles below Great Falls, Va. The Fauna includes a comprehensive bibliography containing 159 titles. The publication will be of use chiefly to professional mammalogists and research workers in zoology, but will also be of interest to natural-history students as a source of information regarding this little-known group of our native fauna.

Finds Ruffed Grouse Scarce in New Hampshire.-- E. A. Preble returned on August 20 from a vacation spent at Ossipee, among the New Hampshire hills, where he made a number of interesting observations. He reports an unusual scarcity of ruffed grouse, none whatever being seen in the course of extensive tramping in localities where a fair number were found late in October last year. Evidences of the existence of a few, however, were observed.

On Duty at Military Camps.--F. C. Lincoln, who holds a commission as first lieutenant in the Signal Corps, was on duty at Fort Monmouth, N. J., during the period August 5 to 18. Together with other reserve officers, he assisted in the training of about 450 Citizens Military Training Camp boys. Mr. Lincoln reports that great interest in the work was taken by both officers and men. John G. May, who is a lieutenant in the District National Guard, was on military duty at Camp Ritchie, Md., during the period August 12 to 26.

Vacationing.--Miss Myra Putnam started her vacation on August 18, accompanying her family on their annual motor trip to Maine. Mrs. Jane S. Elliott, who has been in Europe part of the summer, returned on August 27.

FOOD HABITS RESEARCH

Accepts Position in National Museum.--Remington Kellogg resigned as associate biologist on August 1 to become assistant curator of mammals in the United States National Museum. The Bureau regrets losing the valuable services of Mr. Kellogg as he has been on the staff for short periods under temporary appointment in 1915, 1916, and 1917, being engaged in field work for the Division of Biological Investigations in North Dakota, Montana, and California, and since January 1, 1920, has been with the Division of Food Habits Research, engaged in the examination of the stomach contents of birds of prey, and serving as the pioneer in the project of food habits of amphibians and reptiles. In the latter capacity he has conducted extensive examinations of the stomachs of toads and alligators that have served as the bases for manuscripts on the economic status of these creatures. He is known also as the author of extensive published works on the whales, the work being prosecuted on his own time in cooperation with the Carnegie Institution of Washington. He has handled correspondence on amphibians and reptiles, and was primarily responsible for building to its present size a reference skeleton collection useful in the identification of vertebrate remains in bird stomachs.

Upper Mississippi Survey Progressing.--Reports from F. M. Uhler indicate that he is making substantial progress in this year's survey of the wild-fowl food resources of the Upper Mississippi River Wild Life and Fish Refuge.

FUR RESOURCES

Rabbit Experimental Work in Progress.--Mr. Ashbrook is still in Fontana, Calif., at the Rabbit Experiment Station, where with Acting Director John W. Meyer, he is outlining the experimental work to be carried on with the various breeds of rabbits at the station.

Attend Meeting of Veterinary Medical Association.--Dr. J. E. Shillinger early in the month inspected the fox-disease work being conducted in cooperation with the Medical School of the University of Minnesota, at Minneapolis. He attended the meeting of the American Veterinary Medical Association, held in Minneapolis from August 7 to 10, and delivered a paper, prepared jointly by Dr. R. G. Green of the Medical School and himself, on "Results of Research on Diseases of Fur-Bearing Animals in Captivity," which will be published in the journal of the association. Dr. Karl B. Hanson, of the Fur-Animal Experiment Station at Saratoga Springs, N. Y., also attended the meeting.

ECONOMIC INVESTIGATIONS

Inspecting Field Operations.--Mr. Young left Washington on August 2 for an extended trip through several of the Western States to visit field leaders of this division and make observations on field operations, as well as to confer with the cooperators of the Bureau in the West. He first went to the South Dakota district, and from there proceeded to the Wyoming, Kansas, Oklahoma, and Texas districts, and will visit a number of others before returning to Washington about the middle of October.

Personnel Changes and Appointments.--A. W. Moore, junior biologist, was transferred, effective August 10, from his work as assistant in rodent-control operations in Utah to the Eradication-Methods Project as assistant in the investigational work, with headquarters at Portland, Oreg. His territory includes Oregon, Washington, and Idaho.

S. E. Aldous, who was employed as agent during the past season in rodent-control work in Utah, has been appointed junior biologist, effective September 1, and will be assistant in the Eradication-Methods Project with headquarters at Albuquerque, N. Mex.

Carleton D. Schwartz, of Clinton, N. Y., was appointed junior biologist, effective August 16, to fill the position in the Eastern Rodent Control District made vacant by the resignation of Odom Stewart. Mr. Schwartz's headquarters will be at the North Carolina State College of Agriculture, Raleigh, N. C.

W. F. Polson, assistant leader of predatory-animal control in the California district, has been forced to resign on account of a serious breakdown in health. Mr. Polson has made an enviable record in his work and his resignation is regretted. He and Assistant Leader J. G. Traub were instrumental in terminating the foot-and-mouth disease among deer in 1924, and his work has always been of a high order.

Jack Rabbits Abundant in Nevada.--E. R. Sans, leader of predatory-animal and rodent control in the Nevada district, states that although tularemia has killed off many jack rabbits in certain sections of the State, other districts are overrun with these animals. At the request of various counties, successful demonstrations in poisoning rabbits have been made.

Prairie Dogs Rapidly Being Eradicated in Kansas.--A. E. Oman, leader of rodent control in the Kansas district, reports that the prairie-dog town as an institution is rapidly becoming extinct in Kansas. Estimates submitted in his annual statistical report show only 8,800 acres of remaining prairie-dog infestation. Twenty out of 66 counties in the prairie-dog territory were reported free of these animals. An intensive campaign is being waged to fumigate the scattering prairie-dog towns during August and leave only some of the larger ones for late-fall poisoning by use of grain bait. This season terminates a 5-year program to complete state-wide eradication by December, 1928. There are few prairie-dog towns left of any great area, the maximum aggregate in any county being less than 1,000 acres.

Central Bait Station in Idaho a Success.--The central bait-mixing and distributing station established at McCammon, in the Idaho district, has well served its purpose in the four months' ground-squirrel campaign just brought to a close, during which more than 175,000 pounds of mixed bait were handled. A station of this kind assures the district poisoned bait properly and uniformly mixed and makes available at all times adequate quantities at the lowest possible cost. A saving of more than \$1,000 during the season was made in Idaho through quantity buying of materials other than strychnine and saccharin, and in addition a considerable saving was effected by purchasing strychnine and saccharin in bulk through the Bureau. Other savings made possible by the station come from the use of machinery and low-priced labor on such routine work as steam-rolling, recleaning, mixing, sacking, and distributing, thus giving the Bureau's field men more time for field work. The saving to the Bureau and to the extension service in Idaho in time and reduced cost of materials amounted to more than \$3,000 for the season in addition to savings effected for other cooperators.

Arizona Breaks Records in Rodent Control.--Previous records for controlling rodent pests in Arizona, according to D. A. Gilchrist, leader of rodent control in that State, fell by the wayside during the fiscal year ended June 30, 1928. A total of 4,018 farmers and stockmen cooperating with the Bureau eradicated prairie dogs, pocket gophers, and other injurious rodents from 717,861 acres, or 47 per cent more than during the previous year and 29 per cent more than has ever been treated in any year to date. Signed questionnaires returned by farmers, stockmen, and orchardists developed that \$474,230 in field and orchard crops and range grass was saved through the year's campaign against rodent pests.

Losses by Coyotes and Bobcats in California Decreasing.--C. G. Poole, leader of predatory-animal control in California, states that losses during the past fiscal year from coyotes and bobcats are less than ever before experienced in that district, and there has been a marked increase in the numbers of sheep in all counties where control has been carried on. New counties are entering into cooperative agreements this year, with the result that the livestock counties are now being worked as almost a solid block, which has been the objective from the outset.

Antelope Thriving in Mount Dome Country, Calif.--Mr. Poole also reports that careful inspection of the antelope on their range in the so-called Mount Dome country, in Siskiyou and Klamath Counties, Calif., shows them to be in satisfactory condition, as is also the case with the mule deer there. It is estimated

that there are now about 200 antelope on the range, and the majority of the does seen this spring were accompanied by twin fawns. The results appear to justify the efforts put forth to protect this herd of antelope that five years ago numbered about 90 head and was rapidly being exterminated by predatory animals.

Wolf Taken on Datil National Forest, N. Mex.--A. E. Gray, leader of predatory-animal and rodent control in the New Mexico district, reports that on July 10 Hunter H. L. Leisering, working in the Datil National Forest, took a large male wolf. This region was at one time an important wolf range, but it was so thoroughly covered that no wolf signs have been seen by hunters and none reported for more than six years previous to the capture of this one.

Coyote Causes \$300 Loss.--Mr. Gray reports also that Hunter W. C. Echols, working in Hidalgo County, N. Mex., took a coyote in July that had killed goats and cut up 20 more so badly that they were valueless. The total loss is estimated at more than \$300. The coyote had crawled under the woven-wire fence where the goats were impounded for the night.

Bears Causing Losses in Wyoming.--A. M. Day, leader of predatory-animal and rodent control in the Wyoming district, states that reports of damage by bears have come in from several sections of the State during the summer. The bears have been killing sheep on the Hayden National Forest and in the mountains south of Meeteetse. Hunter J. W. Doubleday reports that bears have been causing the sheepmen a great deal of trouble in his section, killing and crippling as many as 16 sheep in one night. A rancher in the Big Horns reports that late last summer bears killed 40 sheep for him in one night, stampeding them into a shallow lake where they were drowned. Hunter Oliver Robinson reported bears killing 60 sheep south of Hoback River; adding that he had "the ears off the ones that did it." State and Federal hunters during July took 19 bears from localities where they have been doing damage to sheep and cattle.

GAME AND BIRD CONSERVATION

Attends Western Game Conferences.--After attending the conference of the Minnesota Fish and Game League at Hutchinson, Minn., on August 23 and 24 Mr. Sheldon went to Seattle, Wash., to meet Mr. Redington and to confer with United States Game Protectors George Tonkin, R. C. Steele, and W. H. Ransom. He also attended the annual conference of the International Association of Game, Fish, and Conservation Commissioners in Seattle August 27 to 31. At the conclusion of this meeting he is expected to return to headquarters.

Reservations Inspected on Field Trips.--W. R. Dillon returned on August 24 from a 'two weeks' field trip, his itinerary including points in Ohio, Illinois, Minnesota, Missouri, Arkansas, and Tennessee. He made an extended inspection of the Upper Mississippi River Wild Life and Fish Refuge, and also visited Big Lake Bird Reservation in Arkansas. Ernest P. Walker returned on August 16 after a month's reservation inspection trip in the West, during which time he visited the four big-game preserves, the Elk Refuge, and the Upper Mississippi Wild Life and Fish Refuge.

Warden Dies from Leopard Bite.--Word has been received of the death of Dr. Bernard C'Toole, U. S. Deputy Game Warden, formerly of Thurmont, Md., but

since last spring a traveler in Africa. A cablegram was received in New York by a friend stating that Doctor O'Toole was fatally bitten by a leopard and died from the effects. Sympathy is extended to his relatives in their bereavement.

Return from Vacations.--Mrs. Margaret B. Leonard, clerk in the Washington office, returned on August 13 after a month's vacation spent at her home in Bangor, Me. Miss Mary O'Brien, stenographer, returned to Washington on August 6 from a two weeks' trip that included Chicago, Ogden, Salt Lake City, Denver, Colorado Springs, Pikes Peak, and the Yellowstone National Park. Mrs. Burdette E. Muth, dictaphone transcriber, spent her vacation during the month with relatives at New Rochelle, N. Y. Mrs. May R. Jeffries, stenographer, recently returned from her vacation spent at Colonial Beach, Va.

Plume Hunters Apprehended.--Two game-law offenders, in possession of the backs of 21 egrets taken from birds they had just killed, were apprehended recently by State officers at Gulfport, Fla., and confined in jail pending arraignment before the United States Commissioner at Tampa, Fla. This was effected on July 21 by Protector Kelsey and the violators were required to furnish bond of \$1,000 each. Efforts will be made to have the two offenders arraigned at the next term of Federal court for the southern district of Florida. In addition to killing the birds and possessing the plumes, the accused also violated Section 84 of the U. S. Criminal Code, in that the egrets were killed on an area set aside as a Federal bird refuge. As a result of the operations of Federal game protectors in Florida and other States, the work of plume hunters has been restricted, and persons who formerly derived material financial profit by engaging in this unlawful business have had to seek other employment.

Fined for Hunting on Upper Mississippi Refuge.--The first cases for violation of the Upper Mississippi River Wild Life and Fish Refuge Act were successfully prosecuted in Federal court for the Minnesota district on August 6, 1928. The two defendants, who were apprehended on October 11 and November 2, 1927, respectively, by Patrolman William Oldenberg, one for killing a duck and the other for hunting and shooting at birds on the refuge, entered pleas of guilty and were required to pay fines of \$25 each.

States Cooperating in Upholding Migratory-Bird Treaty Act.--Frequent reports are received showing State activity in upholding the principles of the migratory-bird treaty act wherein hunters who are violating both Federal and State game laws are haled before a State court by State wardens, some of whom hold commissions as Federal deputy game wardens. Five recent cases in Minnesota, resulting in fines aggregating \$300 and costs, were against violators who had been shooting ducks in the close season. The evidence was obtained by Federal Deputy Totten assisted by other State wardens.

Buffalo Shipped to Alaska.--The 23 buffalo shipped from the National Bison Range, Mont., in June to Fairbanks, Alaska, arrived on June 27. Nineteen were liberated near McCarty, four being retained at the Reindeer Experiment Station for observation in regard to their reaction to the new climatic conditions. Release of the buffalo in this region is part of a program that is being carried out by the Alaska Game Commission for stocking the country with game and fur animals, funds for which project having been appropriated by the Territorial Legislature. The animals released near McCarty were last reported to be in excellent condition and grazing up the delta valley and following a solitary trail into the wilderness of interior Alaska.

Hay Harvest Begins at the Elk Refuge.--The hay harvest began at the Elk Refuge, Wyo., July 20, and by the end of July 300 tons had been placed in stacks near headquarters and the work was continuing on the other lands within the refuge. State Game and Fish Commissioner Nowlin recently visited Jackson Valley with a view to arranging for the purchase of enough more hay, in addition to that harvested on the refuge lands, to provide for the feeding of the elk next winter.

Committee Visits Elk Refuge.--Members of a subcommittee of the Senate Committee on Public Lands and Surveys, which held a meeting in Jackson, Wyo., on July 22, were shown over the Elk Refuge by A. P. Nelson, protector of the Elk Refuge, and Horace Albright, superintendent of Yellowstone National Park. The committee was much interested and obtained considerable information as to the acreage of the refuge, the quantity of hay produced, and the requirements for feeding the elk.

Niobrara Notes.--Protector Fred M. Dille, of Niobrara Reservation, Nebr., reports that the three young fawns in the band of antelope there have been killed, presumably by a bobcat, sometime in July. Traps have been set and every effort is being made to capture the destroyer.

Mr. Dille states that "hit and run" drivers along the highway caused much damage to fences and gates during July. Some years ago, when travel was mostly local, it was necessary to arrange for the crossing of the reservation by one main highway. Conditions, however, are changing rapidly, and automobile and tourist traffic is doubling with each season.

Dr. Irvine Blake, of the zoology department of the University of Nebraska, camped for a few days on Niobrara Reservation in July. He was in the field to make observations for winter studies and was much impressed with the research possibilities on the reservation. Visitors at the reservation during July numbered 256.

Conditions Good at Lake Malheur.--Protector George M. Benson, of Lake Malheur Bird Reservation, Oreg., reports that conditions at Lake Malheur are good, and that the water has spread through all the tule area west of the main lake and to Narrows and Mud Lake, giving the birds a wide nesting area. Last year many perished when the water holes dried up, but it is believed that the water this season will stand on some of the area until the birds can fly. Hunters, trappers, and some of the ranchers in the vicinity of Lake Malheur have assisted in the campaign against ravens and the situation with regard to these predatory birds on the refuge is much improved. During the past four months Mr. Benson has killed approximately 500 ravens and many destructive hawks and owls.

Recent visitors to Lake Malheur Bird Reservation were Governor and Mrs. Patterson, of Oregon, and Secretary of State and Mrs. Kozer. The governor announced that he was going back again particularly to see the birds out on the lake, which he was unable to do during this visit.

Waterfowl Raised Cooperatively at Lake Winona.--The Hoover Bass Pond has become a popular and effective means of replenishing the supply of this splendid game fish, but it is not generally known that a somewhat similar plan has been put in operation by the Biological Survey to bring back our wild fowl. Two years ago when the United States Wild Life Refuge on the Upper Mississippi was beginning to take shape, Superintendent W. T. Cox suggested that a supply of wild ducks, geese, and, if possible, swans might be obtained by the Government and placed on Lake Winona provided the City of Winona would feed and care for the birds. These fowl, it was thought, would attract large numbers of wild ducks and geese during migration and make of the lake a great sanctuary similar to that which Jack Miner

has built up at Kingsville, Ontario. The surplus birds resulting from increase would be available for liberation each autumn to go south with the wild flocks, or, perhaps, used to some extent to stock other similar "cooperative duck ponds." The Chief of the Bureau favored the suggestion and authorized Mr. Cox to obtain the wild fowl necessary. Accordingly, upwards of a hundred wild ducks of different kinds and nine wild geese were bought, captured, or otherwise acquired and placed on the lake. The city for its part, mainly through the interest and efforts of its park board, erected a cottage for a keeper and a substantial shed and inclosure on the north shore of the lake, where the birds have been fed and sheltered since last summer and where they attract much interest among citizens of Winona, particularly among the boys and girls. Last fall and again this spring during the migrations large numbers of wild fowl, including ducks of many species, Canada geese, and at least one flock of swans, alighted on the lake, probably because of the presence on the water of these "tame" wild birds. Just before Christmas last year, 40 of the surplus drakes were killed and given to the Winona Hospital. The remaining birds, about 100, came through the winter without loss. Many of the ducks have mated and nested; more than 30 nests have been discovered so far and it is expected that a considerable number of young ducks will be raised from this year's hatching. Some of these will be surplus, and it is hoped that they will be available to some extent to stock other cooperative ponds and to be released to see if they will return, as it is believed they will next spring, to nest in this same general locality and thus tend to build up a local stock of birds. The measure of success already attained in this cooperative project is attracting no little interest, and other similar projects are being started at a number of points along the 300 miles of the refuge. In order to make secure the wild fowl placed on the west half of Lake Winona, and especially in order that that portion of the lake may serve as a spawning ground for game fish, a request has been made by Mr. Cox and by District Supervisor C. F. Culler, of the Bureau of Fisheries, to have all fishing prohibited on that portion of Lake Winona. This is the first request to have any part of the Upper Mississippi Wild Life Refuge completely closed to fishing. Other areas are likely to be closed from time to time as they are found to be vitally necessary as fish-hatching areas.

Memorials Proposed at Upper Mississippi Refuge.--In addition to the proposed establishment of a memorial to Will Dilg, founder of the Izaak Walton League of America, another memorial, sponsored by the Daughters of the American Revolution, is projected for the Upper Mississippi Refuge. This contemplates the placing of a suitable marker on Pikes Peak, one of the highest bluffs along the Mississippi River, near McGregor, Iowa. This peak is now within the refuge boundaries as a result of a gift of the lands by Dr. J. B. Munn, of New York City. It is opposite the mouth of the Wisconsin River and is the site selected by Zebulon Pike for the establishment of a fort in the early days of the 19th century. The suggested fort, however, was not built at the point that Pike suggested, but was erected across the river near Prairie du Chien in a vulnerable position, where it was easily captured during the War of 1812.

Specimen Case Installed.--A large glass case has been placed in the Biological Survey Office at Winona, Minn., to hold a number of specimens of wild fowl and other animals found on the Upper Mississippi Refuge. This collection, it is hoped, will be added to from time to time.

Stocking Program Under Way at Upper Mississippi Refuge.--This spring a substantial beginning was made toward stocking the Upper Mississippi Refuge with

game and fur-bearing animals. A few deer and beavers were placed at different points along the refuge, and muskrats were transferred from places where they were abundant to other localities where they had become exceedingly scarce. Suitable localities also were found for further stocking projects and the ground work laid for obtaining desirable birds and mammals.

Personnel Notes.--A. P. Chambers, reservation protector at Wind Cave Game Preserve, S. Dak., continues seriously ill at the Marine Hospital, Chicago, Ill., but it is hoped that his condition will soon show marked improvement. Rudolph Dieffenbach, land valuation engineer of the Winona Office, who spent some weeks this summer in Washington, has returned to Winona.

Appointments.--William E. Selfridge, of Ketchikan, Alaska, has been appointed Alaska game commissioner for the First Judicial Division. Miss K. Esther Largent has been appointed clerk-stenographer at the National Bison Range, Mont. Vanez Wilson has been appointed assistant irrigation engineer and James D. Scott and Nathan Weldon Green clerk-stenographers, in connection with the work of establishing the Bear River Migratory Bird Refuge, in Utah. Ottman Berni and Nels Nelson have been appointed deputy reservation rangers and United States deputy game wardens at the Upper Mississippi River Refuge. Robley J. Schmalhausen, employee of the United States Reclamation Service, has been reappointed cooperative reservation warden and deputy game warden at the Rio Grande Bird Reservation, N. Mex., which is within the reclamation project. George R. Shannon, who has been acting as warden at this refuge, has been transferred to another station. Paul F. Hutson has been appointed United States reservation warden and deputy game warden at Savannah River Bird Refuge, S. C.

Refuge Abandoned.--Mosquito Inlet Bird Refuge, Fla., has been abandoned in accordance with a recent Executive order. A recent survey indicated that the lands included within the refuge properly belonged to the State, with the exception of several small islands or small points of land near the town of New Smyrna, which, owing to the growth of the town and increased traffic in their vicinity, had become of little or no value to the birds.

Lands Eliminated from Deer Flat.--Several small parcels of land within Deer Flat Reservation, Idaho, were eliminated from the refuge by an Executive order of June 6, 1928.

Visitors at Sullys Hill.--During July, 7,391 persons visited Sullys Hill Game Preserve, N. Dak. Rainy weather during the early part of the month doubtless kept many visitors away.

Treaty-Act Cases Terminated--Reports Received During July

<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Blackwell*, Taylor	1	Illinois	Selling ducks	\$15 and costs of \$35.
Hoffman, Moody**	1	Alabama	Killing doves in close season	\$5
Holland*, Foulkes**, Theriot**	1	Louisiana	Killing ducks in close season	6 months suspended jail sentence.
Holmes, Korb*	1	Nebraska	Hunting ducks after sunset	\$5
Kelsey, Saunders**	1	Florida	Hunting ducks from a motor boat	\$5
" "	1	Florida	Hunting ducks from a motor boat	\$10
Mrovka*	1	Missouri	Possessing ducks in close season	\$50
Shaver	3	Minnesota	Hunting ducks after sunset	\$10 each
Smith	1	Maine	Hunting geese in close season	\$10
Steele	1	Kansas	Killing sandpipers	\$5
Tonkin	1	California	Hunting ducks after sunset	\$5
Whitehead	1	Georgia	Killing doves in close season	\$50

Cases Reported for Prosecution

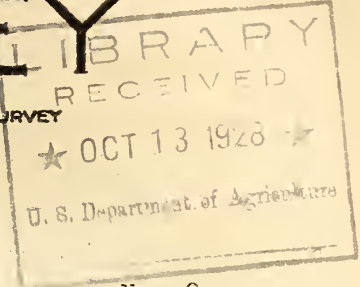
<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Dearing**, Riddick	1	Arkansas	Killing robins
Holland*, Caibrac**	1	Louisiana	Killing a heron
Holland*, Foulkes**, Theriot**	1	"	Killing ducks in close season
Holland*, Pertuit**, Thompson**, Landry**	1	"	Killing herons
Holland*, Texada**, Gremillion**, Brouillette**	5	"	Killing herons
Holland*, Thompson**	1	"	Killing herons
Holland*, Thompson**	1	"	Killing herons
Landry**			
Perry	4	Mississippi	Hunting ducks after sunset
Riddick, Perry	1	Arkansas	Selling ducks
Roahen	1	Illinois	Possessing ducks in storage in close season

* U. S. Deputy Game Warden.

**Deputy State Game Warden.

THE SURVEY

ISSUED MONTHLY FOR THE PERSONNEL OF THE BUREAU OF BIOLOGICAL SURVEY
UNITED STATES DEPARTMENT OF AGRICULTURE



Vol. 9

Washington, D. C., September 29, 1928

No. 9

TO THE MEMBERS OF THE SURVEY:

On my return from an extended trip through the Western States and particularly in the Territory of Alaska, I have been heartened by the evidence that I have obtained from personal reports and from correspondence that steady progress is being made by the Biological Survey through the close attention to duty by its loyal personnel.

Our great objective is to obtain facts relating to the wild-animal and bird life of this country and then, so to use the derived information that it will not only be increasingly helpful to the interested public, to our coöperators in the Federal and State Governments, and to the great associations that are primarily interested in the welfare of wild life, but also will guide us with greater certainty along the paths we should follow. It is gratifying to appreciate that you are all, in your respective spheres, contributing something of real worth to the work of the Survey.

Our activities are scanned closely by a legion of interested observers, and as we progress in a clear definition of our objectives, in our policies laid down to reach these objectives, in uniformity of practice, and in unswerving attention to the jobs we have, so shall we increase the value of our public service and more completely redeem our responsibilities to those forms of wild life that by act of Government have been placed in our guardianship.

Paul G. Redington
Chief.

GENERAL NOTES

Chief Discusses Alaskan Wild Life. --Mr. Redington arrived in Washington on September 11 after an extended tour of Alaska, during which he was accompanied by H. W. Terhune, executive officer of the Alaska Game Commission. On the return trip he stopped at Seattle and addressed the joint annual convention of the International and Western Associations of Fish, Game, and Conservation Commissioners and the American Fisheries Association, and spoke at their banquet. At the first Tuesday morning conference of the Survey staff following his return he gave a comprehensive account of his trip. He was able to note the difficult problems faced by the Alaska Game Commission and the excellent manner in which the job is being handled, and to meet the members of the Commission and the wardens and compare the work that is expected.

there of 7 wardens over a vast territory with that of wardens operating over much smaller areas in the United States.

During three weeks spent on Kodiak Island, he gained much information regarding the status of the Kodiak bear. While there he trailed five bears and took a large one as a trophy. He also had shipped back for deposit in the National Zoological Park a bear cub, and described a number of interesting experiences with the little animal. Incidentally, he said, the cub nearly demolished one crate during shipment and had to have a new one constructed to complete the trip to Washington. A visit was made to Afognak Island, where signs of bears were much in evidence, and considerable time was spent on the Alaska Peninsula and Unimak Island gaining reliable information on the abundance and status of the bears there.

While in the general region he had an excellent opportunity to observe numbers of the sea birds. The opportunity seldom enjoyed by visitors to the Territory was availed of to land on Bogoslof Island, the weather conditions, heavy seas, and fogs usually preventing a landing. The new crater on the island was described as the most interesting geological feature, and the hundreds of sea lions on the beaches and the large rookeries of murre as quite notable.

Mr. Redington was as far north as Fort Yukon in the interior and Teller on the west coast, and at the latter place saw the handling of about 3,000 reindeer in the corrals. Methods of travel were varied, boat, airplane, and automobile being used, and in many cases difficult country was traversed on foot. Near Fairbanks he noted the excellent condition of the buffalo that had arrived from the National Bison Range, and assisted in controlling a bad forest fire, which destroyed much reindeer forage, on the grounds of the Reindeer Experiment Station. He also spent some time with R. K. Stewart, who is making a survey of the predatory-animal situation, and finds that Mr. Stewart's methods of trapping, as explained to and used by trappers, are resulting in a large take of predatory animals.

The Survey, the Game Commission, and all interested should in Mr. Redington's opinion see to it that there is no undue depletion of the numbers of the Alaska brown bear. Investigations are being made of stock-killing propensities of these animals and of their menace to human beings. The work of wild-life administration in the Territory was pronounced satisfactory with the available facilities, but the need of funds for adequate expansion was very evident.

Among the Eskimos met by Mr. Redington on this trip were Sam Segok, Frank Kautchuck, Aaron Peneok, Bango Ea, Mary Busataruck, Dora Etagatoek, Gran Gonegon, George Kobuck, Marie Autisulook, Chuck Pen, Sam Oten.

The death of Charles Sheldon, of Washington, D. C., well-known conservationist, explorer, and author of several books on the northern wildernesses of North America, which occurred suddenly at his summer home at Kedgema-kooke, Nova Scotia, on September 21, came as a shock to his many friends and associates in the Biological Survey. Mr. Sheldon was an enduring friend and cooperator of the Survey and of the Forest Service, always awake to the interests of conservation and was always active in the cause of wild life. About 25 years ago he began the explorations and hunting trips in the Yukon Territory, Alaska, and Mexico, the accounts of most of which are preserved in his writings. Mr. Sheldon was a member of the American Ornithologists' Union, the American Society of Mammalogists, the Biological Society of Washington, the

New York Zoological Society, the Cosmos Club, the Boone and Crockett Club, the Explorers' Club, and other organizations interested in the cause of wild life. Mrs. Sheldon and their three children have the sympathy of the members of the Biological Survey in their bereavement.

Unclaimed Mail Often Means Removal from Mailing Lists.--Particular attention of field men is called to an article on page 4 of the OFFICIAL RECORD for September 5, 1928, regarding field employees' unclaimed mail. Much unnecessary work is occasioned, it is stated, "in connection with the maintenance of mailing lists, on account of the apparent failure of field employees to request the postmaster at their official headquarters to hold all but first-class mail matter while they are temporarily absent on trips." The government Printing Office, on receipt of mail marked "Unclaimed," "Unknown," etc., immediately destroys the stencil bearing the addressee's name. The Office of Information solicits the cooperation of all field personnel in seeing to it that addresses of bona fide employees are not thus dropped from mailing lists.

Visitors.--Recent visitors at various offices of the Bureau were Dr. Otto Leis Tinklepaugh, of the Institute of Psychology at Yale University, who is interested in mammals, particularly monkeys, and J. Van der Bellen, of Dorpat, Esthonia, interested in fur farming and in the introduction of foreign game birds.

Official Publications.--The following official publications of the Biological Survey were issued during the month:

Directory of Officials and Organizations Concerned with the Protection of Birds and Game. Miscellaneous Publication No. 30. Compiled by Talbott Denmead and Frank G. Grimes. 12 p. Received August 31.

Game Laws for the Season 1928-29. Farmers' Bulletin No. 1575. By Frank L. Earnshaw. 46 p. Received September 7.

Work and Organization of the U. S. Rabbit Experiment Station. Leaflet Bi-983. 2 p., mimeographed. Received September 12.

Migratory-Bird Treaty-Act Regulations and Text of Federal Laws Relating to Game and Birds. Service and Regulatory Announcement--B.S. 70. 16 p. Received September 17.

List of Publications of the Biological Survey. Leaflet Bi-982. Compiled in the Editorial Office. 29 p., mimeographed. Received September 18.

Outside Publications.--The following articles by members of the Biological Survey appearing in outside publications have been reported during the month:

Denmead, Talbott. Our Hired Men. National Sportsman, vol. 60, no. 4, p. 11-13, illus. October, 1928.

Miller, W. B. Beyond Our Northern Timberline. The Idaho Forester, vol. 10, p. 18-20, illus. 1928.

Oderkirk, G. C. Protecting Corn from Blackbirds and Crows. Indiana Farmer's Guide, vol. 34, no. 34, p. 18. August 25, 1928.

----- Mole Control in Lawns and Gardens. Indiana Farmer's Guide, vol. 84, no. 37, p. 1, illus. September 15, 1928.

- Ransom, Webster H. A Loquacious Long-lived Magpie. Bird-Lore, vol. 30, no. 4, p. 263-264. July-August, 1928.
- Young, Stanley P. Bears Sometimes Unjustly Blamed as Stock Killers. The Western Farm Life, vol. 30, no. 15, p. 4. August 1, 1928.
- Young, Stanley P. [and Arthur H. Carhart]. Old Lefty of Burns Hole. Blue Book Magazine, p. 100-111. October, 1928.

BIOLOGICAL INVESTIGATIONS

Elk Studies Continue.--Studies of the elk at Jackson Hole, Wyo., were continued by O. J. Murie during August with special reference to the food taken, the preferences exhibited, the composition of the vegetable covering of the ranges, and the degree of utilization. The habits of various other associated animals were also studied as occasion permitted. The elk showed indications of assuming the winter pelage about the first of August, about the middle of the month were beginning to rub the velvet from their horns, and by the end of the month all this covering had been removed, and a few were bugling, indicating the approach of the mating season.

Two Remarkable Bird-Banding Returns.--Among the many interesting returns from banded birds received during the past month, are two of exceptional importance. A drake pintail, banded on September 5, 1927, at Keno, Oreg., by Charles C. Sperry, was killed on December 23, 1927, near Belize, British Honduras, by Percy Dyer. This is one of the most southern records thus far received for a duck banded in North America. The other record is for mourning dove No. 306053, banded at Fort Riley, Kans., on July 5, 1926, by Capt. Leon L. Gardner. It was shot in January, 1927, at Apipilulco, Geurrero, Mexico, by Juan Zinser. Mr. Zinser is interested in ornithology and has been invited to assist in the study of North American birds by banding those species found in winter in the vicinity of Mexico City, which are visitors from their breeding grounds in the United States or Canada. If this plan develops, an important banding station may be established in Mexico.

Takes Waterfowl Census on Potomac.--Dr. H. E. T. Jackson made the monthly waterfowl count on the Potomac on September 12, and noted species as follows: Black duck, 130; lesser scaup, 50; canvasback, 16; ruddy duck, 1. Other interesting birds included American egret, 3; bald eagle, 4; common tern, 1; and some black terns, laughing gulls, and Bonaparte gulls.

Visitors.--Among the visitors to the division offices during the past few weeks were the following: J. S. Gutsell, of Beaufort, S. C., August 15; Frederick W. Miller, of the Colorado Museum of Natural History, August 29; and Aldo Leopold, September 11.

Return from Vacations.--Members of the division who have lately returned from vacations include the following: Miss Emma M. Charters, back from a motor tour that included parts of New Jersey, New York, southern Ontario, Ohio, and Michigan; Miss Myra Putnam, Maine and New Hampshire; and Miss Pauline Johnson, Ohio and points west.

FOOD HABITS RESEARCH

Study of Bird-Attracting Methods Yielding Valuable Information.--The experiments in attracting birds to the Experimental Chestnut Orchard at Bell, Md., which are being carried on in cooperation with the Bureau of Plant Industry, continue to yield good results from year to year. In 47 bird boxes erected on a tract of $2\frac{1}{2}$ acres there were produced during the first season, that of 1926, 17 partial or complete broods of birds, an average of 6.8 broods to the acre. In 1927, with the same equipment, the number of broods rose to 40, an average of 16 to the acre. In 1928, 52 additional bird houses were erected, making a total of 99, scattered over $3\frac{1}{2}$ acres, and 65 broods were produced, an average of 18.5 to the acre. The kinds of birds and the number of broods of each in 1928 were: House wren, 33; European starling, 9; English sparrow, 8; purple martin, 7; bluebird, 6; flicker, 1; and crested flycatcher, 1. These operations at the experiment station are enabling the Biological Survey to experiment in bird-attraction methods and are yielding valuable information in that field, as well as fulfilling the primary object of the studies--from the cooperating bureau's point of view--namely, the increase in the number of insectivorous birds in the locality.

Upper Mississippi Wild-Fowl Food Survey Completed.--F. M. Uhler has brought to a close his summer's work on the Upper Mississippi Wild Life and Fish Refuge, where the survey of aquatic plant life and wild-fowl food resources was completed. Collections have been sent in and equipment stored, but before returning Mr. Uhler will remain in Minnesota on a short period of leave. His assistant, Herbert W. Graham, has returned to the Carnegie Museum at Pittsburgh, Pa.

Spends Week in Quail-Study Territory.--E. R. Kalmbach spent the last week in August at the scene of the quail investigation in southern Georgia, where he conferred with H. L. Stoddard and Charles O. Handley regarding details of the forthcoming report on the study.

FUR RESOURCES

Attend Fox Breeders Summer School.--Dr. J. E. Shillinger, of the Washington office, and Dr. Karl B. Hanson, of Saratoga Springs, N. Y., attended the joint summer school of the New York State and American Fox Breeders Association, held the latter part of the month at Springfield, Mass. Doctor Hanson read a paper entitled "Lungworm Trouble in Foxes, Its Control, and Treatment."

Returns from California.--Mr. Ashbrook left Fontana, Calif., on August 27, and on his return trip to Washington stopped in San Francisco, Calif., Seattle and Portland, Oreg., Vancouver, British Columbia, Winnipeg, Manitoba, Minneapolis, Minn., and Chicago, Ill.

ECONOMIC INVESTIGATIONS

Mr. Young Continues Field Trip.--Mr. Young, since leaving Washington on August 2, has visited points in South Dakota, Wyoming, Kansas, Oklahoma, Texas,

New Mexico, Colorado, Idaho, Utah, and Nevada, where he has inspected the field operations in both predatory-animal and rodent control whenever possible, and conferred with the leaders in both lines of work relative to putting our operations and cooperative relationships on as efficient basis as possible. He also considered matters pertaining to the Eradication-Methods Project with F. E. Garlough, leader of that project, at Denver. Mr. Young has made some good contacts with cooperators as well as with Bureau representatives. Before returning to headquarters, about October 15, he will also visit field offices in California and Arizona.

Black Bears on Rampage this Season.--Predatory black bears have been exceptionally troublesome in the region south of Jackson Hole, Wyo., this season. Hunter Oliver S. Robinson, working south of Hoback Canyon, Wyo., took 11 of these animals during July (9 old ones and 2 cubs). On August 3 he learned that bears had killed 60 of one band of sheep in one night. Traps were set and on the next day he caught a large female, shot a male and a cub, and captured another cub alive, thus disposing of the family responsible for the killing. In the Montana district also bears have caused more damage the past summer than usual. R. E. Bateman, leader of predatory-animal control in Montana, is of the opinion that this is due to the scarcity of their food in the mountains.

During the past three months, damage by bears has been reported from Colorado, Arizona, and Oregon, as well as from Wyoming and Montana. In all districts precautions are taken to catch only stock-killing bears, and in the Colorado district the Bureau hunters are required to get affidavits from reliable stockgrowers to the effect that a certain bear is known to be killing livestock before the hunter is permitted to make an effort to get it.

Woolgrowers Continue Cooperation.--Woolgrowers' organizations in Wyoming are demonstrating their faith in organized predatory-animal control by very concrete evidence--funds. The Rock Springs Grazing Association has again appropriated \$2,000 to cooperate in employing regular hunters, which with the fur receipts will total about \$5,000. The Campbell County Woolgrowers' Association voted an assessment of 3 cents a head on sheep to employ two regular hunters. Carbon County sheepmen have raised enough funds to employ three hunters, and the Star Valley sheepmen sufficient for one. The Bureau is matching such cooperative units with a like number of hunters, and in addition is supplying traps, poison, ammunition, and supervision to the association hunters.

Pocket-Gopher Work Showing Good Results.--A. M. Day, in charge of rodent-control work in Wyoming, reports that two crews have been poisoning and trapping pocket gophers in national forests in Wyoming during the past summer. A crew in the Big Horn Mountains is doing clean-up work on areas treated last year. An inspection of Sitting Bull Park, the 300 acres of which were practically ruined by pocket gophers before the crews started work in August, 1927, showed only one live pocket gopher left. The grass is rapidly thickening up again.

It was stated recently by the man who has had the haying contract for a number of years on the Fort Riley Military Reservation, Kansas, that "the pocket-gopher problem has been entirely cleared away on the north bench and we have had no trouble this year from gopher mounds." He mentioned one spot in particular, of about a hundred acres, where "three years ago the gophers had

the hay crew practically whipped, but this year the hay was fine there, and we never hit a mound on the whole piece. I hope they don't let the gophers get started again." There are approximately 8,000 acres of mow land on the north bench, nearly all of which was originally infested. All of this area has been treated and re-treated during the past three years, the work being done principally by employees of the Fort Riley Post. After these men had been trained to the work, the Biological Survey contributed only occasional supervision and time on re-check poisoning.

A Dangerous Toad.---M. E. Musgrave, leader of predatory-animal control in Arizona, reports the following incident: "A most unusual thing happened to me on the evening of August 31. I lifted a large dark green toad out of a stand-pipe in front of my house. A wire-haired terrier dog standing by jumped at the toad, which swelled up and hissed. The dog then grabbed the toad and killed it. In the meantime a large police dog ran up and just put his nose on the toad. Within two minutes' time the police dog was partially paralyzed, staggering, and falling, unable to control its body and legs. Within three minutes from the time the dog first attacked the toad the wire-haired terrier was dead, evidently from congested lungs, as she was apparently unable to get air into her lungs from the time I picked her up, which was not more than a minute after she killed the toad. I became very sick myself, having a peculiar lifting feeling in my lung cavities and a swimming feeling in my head. I wanted to keep going, walking, and did so for about thirty minutes and the sickness wore off. The big police dog recovered about an hour after it put its nose on the toad and apparently suffered no after effects."

Hunter Takes Nine Lions in August.---Mr. Musgrave, also writes: "Nine lions in the month of August is the greatest number of lions ever caught to my knowledge by anyone in Government service during the summer months. Hunter Carl Larsen made this record in August and the shock was too much for him. When I visited him on September 1 the doctor had instructed him to stay in bed several days. Whether he was suffering from lion-catching or flu-catching I am not prepared to say."

Prairie-Dog Eradication Inspected.---D. A. Gilchrist, leader of rodent control in Arizona, accompanied by the secretary of the Arizona Woolgrowers' Association, made a trip during August covering an inspection of the sheep ranges where prairie dogs have been eradicated this season by the cooperation of stockmen and Survey agents. Ranges in Coconino, Yavapai, and Mohave Counties were visited and plans made to complete the work. The lambs grazing on ranges from which the prairie dogs had been eradicated were in fine shape, but they did not look so well on ranges where no effort has been made to control the prairie dogs.

Hunter Out for Record Catch.---E. R. Sans, leader of predatory-animal control in Nevada, reports that at the first of the fiscal year Leo Weilmunster stated that he was going out to beat the record of any Government trapper for a year's work. So far in the Nevada district this record has been held by MR. W. Young, who during last year averaged one predatory animal a working day. Leo has made a wonderful start by taking 154 predatory animals this month. The previous record for one month was held by Bill Snyder of the Oregon district, who a number of years ago took 150 coyotes in August and 130 in September. If Leo does not run out of coyotes, it is reasonably certain that he will make good his assertion.

More Federal Funds Needed in Arizona and New Mexico.--On August 27, Mr. Gilchrist addressed the annual meeting of the Regional Forest Protection Board for Arizona and New Mexico at Fort Valley, Ariz. The board went on record in favor of increasing the Federal rodent-control funds for New Mexico to \$32,250 a year for ten years and for increasing the Federal rodent-control funds for Arizona to \$31,500 a year for ten years. Prairie dogs, porcupines, field mice, and ground squirrels are severely damaging the forests and other Federal lands in these States. The funds at present available are not sufficient to handle the problem.

Survey Men Cooperate in Forest-Fire Protection.--A. E. Gray, leader of predatory-animal and rodent control in New Mexico, recently received a letter from Forest Ranger Fred N. Ares, of the Luna Ranger Station, commending Isom Newby, project foreman in rodent control, and his Survey crew for the help and cooperation extended in controlling forest fires in that region during the past season. On July 6, when several bad fires were burning at once and the local settlement had been drained of man-power, Mr. Newby, acting upon his own initiative, took his crew of five men to the fire, which appeared to be located in a most dangerous place. "This prompt action," said Mr. Ares, "was undoubtedly a factor in holding this fire to a small area. They were not able to get very close to the fire in the truck and were compelled to climb on foot at night up one of the steepest and roughest mountains on the district through dense brush for nearly two miles before they reached the fire. I had been able to spare only two men for this fire, and it is certain that they could not have put it under control the first night had it not been for the help from your crew. I consider this service worthy of the highest praise, since the action probably saved the Government some heavy expense, as the fire was in a bad place and could easily have been a big one."

About the same time, Mr. Gray received the following letter from the office of District Forester Frank C. W. Pooler, of Albuquerque, N. Mex.:

"Forest Supervisor Winn, of the Coronado National Forest, reports to this office that Mr. Clarence Echols, a government hunter working under your office, rendered commendable and valuable service in connection with a forest fire which occurred on the Animas District of the Coronado Forest on July 15. He states that at the time the fire was discovered, Ranger Marks was out of communication but that Mr. Echols immediately organized a crew and extinguished the fire, which burned over about twenty acres of grass land but which might easily have burned over a thousand acres in view of the type of cover had not prompt and efficient action been taken by Mr. Echols. We wish to express our appreciation of the valuable cooperation rendered in this instance which, if it had not been extended, might have resulted in a disastrous fire."

From the California district, C. G. Poole, leader of predatory-animal control, reports that forest fires have been driving some of the coyotes and bobcats into the open and that two such bobcats taken in Sacramento County were not even in the brush, so are evidently getting away from their usual haunts. Hunter Hicks was kept pretty busy heading this drift off, and has 19 coyotes and 2 bobcats to his credit for the month.

GAME AND BIRD CONSERVATION

Western Game Conferences Well Attended.--Mr. Sheldon returned to Washington on September 9 from his western trip. He reports that the conference of the Minnesota Fish and Game League, held at Hutchinson, Minn., on August 23 and 24, was well attended, with many nationally known conservationists present. He addressed the meeting on the subject of the work of the Survey. He visited the farm of Sam Anderson, who is developing a wild-fowl refuge similar to that of Jack Miner at Kingsville, Ontario, and is meeting with success in the undertaking. There were wild ducks and geese representing practically all the common species on a small pond within 100 yards of Mr. Anderson's house, and each year the pond is visited by increased numbers of the wild birds.

From Hutchinson Mr. Sheldon went to Seattle, Wash., where he attended the annual convention of the associations of game, fish, and conservation commissioners, August 27 to 31. Mr. Redington, who expected to arrive from Alaska on the opening day of the convention, was delayed two days by fog, which made navigation impossible. He arrived in time to address the meeting and to speak at the banquet. The conference was well attended, with about 220 delegates and representatives present. A general spirit of harmony prevailed, and much interest was manifested in national conservation work.

At the conclusion of the convention, a conference of U. S. game protectors, including R. C. Steele, George Tonkin, and W.H. Ransom, was held, with Mr. Sheldon presiding. H. W. Terhune, of the Alaska Game Commission, of Juneau, Alaska, was a welcome guest at this meeting. Mr. Sheldon proceeded from Seattle to Sandpoint, Idaho, where he obtained information relative to the wild-fowl situation on Lake Pend Oreille. He also spent a day with Reservation Protector F. H. Rose on the National Bison Range, inspecting the fencing and other improvements under way there.

Waltonians Organize in Massachusetts.--Talbott Denmead represented the Survey and was one of the speakers at the formation of the Massachusetts State Division of the Izaak Walton League of America at Springfield September 14 to 16. On September 13, en route to Springfield, he stopped in New York City, where he interviewed several conservationists and others interested in the enforcement of the migratory-bird treaty act.

Few Sick Ducks at Bear River this Year.--David H. Madsen, superintendent of the Bear River Migratory-Bird Refuge, advises that very few sick ducks have been observed in that region this season, and that the fullest cooperation obtains between the Utah State Game Department and the Survey in trying to prevent a recurrence of the duck malady. The drought in the Bear River region, he says, is not without its benefits. Recession of water from much of the flat alkali country has limited the ducks to comparatively small areas of fresh water, and they are feeding in such places and in the grainfields. "A heavy rain," he adds, "would doubtless attract them onto the alkali flats, in which case some sickness might occur; but with the opening of the season so near, when the ducks will be set in motion and scattered over the country, I am hopeful that we are fairly safe for this season."

Wild Fowl Have Good Season.--Observation of wild-fowl conditions throughout the country indicate that this has been an excellent breeding season. Sloughs, marshes, and pond holes are well stocked.

Congratulations!--Game Protector W. L. Birsch and wife are receiving congratulations and best wishes on the birth of a son and heir, William Lafayette Birsch, Jr., on August 27. The members of the Survey join the the felicitations.

Deputy Warden's Death Confirmed by Attending Physician.--Information from the physician who attended U. S. Deputy Game Warden Bernard O'Toole during the last hours before his death, in Africa, mention of which was made in the last issue of THE SURVEY, advises that Mr. O'Toole was trapping lions and leopards, and when he was trying to obtain photographs of a large male leopard, which was caught in his trap, the animal became infuriated and in making a hard leap broke from the trap and bit Mr. O'Toole in the thigh before he could get his gun. Everything possible was done for him, both by the natives and by the physician at Kilossa, Tanganyika, but blood poisoning developed, and on July 30, only a few days after the accident, he died. He was buried in a local soldiers' cemetery.

Killer of Deputy Gets Life Sentence.--The man who shot and killed U. S. Deputy Game Warden Frank E. Fagot, Jr., on November 29, 1927, while the latter was attempting to arrest him for violating the Louisiana State game laws, was sentenced to life imprisonment at the last term of State court. Mr. Fagot was working in the capacity of State game warden at the time he was shot, and also was wearing his Federal warden badge. Some of the shots hit this badge, which was considerably bent from the force of the bullets.

Heavy Fines for Killing Doves.--Two residents of Memphis, Tenn., apprehended by Federal Game Protector Perry for killing and possessing mourning doves in Shelby County, Tenn., on August 24, were arrested and arraigned in Federal court at Memphis on August 29, when they pleaded guilty and were required to pay a fine of \$100 each.

Conditions Good at Lake Malheur.--Under date of August 25, Protector George M. Benson, of Lake Malheur Bird Reservation, Oreg., reported that birds were congregating by the thousands and feeding in the channels leading out to the lake, and that he believed they would all be able to fly before the channel dried up. A few coots also were feeding in the muddy shallow ponds. While posting on the east boundary of the reservation he could see thousands of birds from the shore. He also reports that the Canada geese that he has raised have attracted several large flocks of wild geese to the big spring at the refuge, where they feed and sun themselves, and are getting quite tame.

Visitors at Game Preserves.--Senator Peter Norbeck, of South Dakota, visited Wind Cave Game Preserve on September 3 and conferred with Engineer Fellows, of the Bureau of Public Roads, in charge of the project to dam Cold Spring Creek on the Reserve.

A total of 4,063 persons and 944 cars was reported at Sullys Hill Game Preserve, N. Dak., during August. There were 422 visitors and 102 cars on August 26. The construction work for the accommodation of the public is progressing satisfactorily.

Officials of the Bureau of Fisheries with a party of 70 boys and railroad officials visited the National Bison Range, Mont., on August 27 to see the buffalo.

Wood Ducks Abundant at Savannah River Refuge.--Paul F. Hutson, United States deputy and reservation warden, reports, under date of August 11, great numbers of wood ducks on the Savannah River Bird Refuge, S. C. The high waters resulting from the recent floods cover the rice fields higher than at any time since 1925 but have not affected the food for the wood ducks, and they are arriving there by the thousands.

Birds Plentiful at Pablo.--Reservation Protector Frank H. Rose reports that on August 29 he saw more birds, chiefly ducks, on Pablo Bird Refuge, Mont., than ever before on this area. Among these were 19 Canada geese.

Mongoose Deported.--A mongoose arrived at the port of New York on the S. S. Marabal from Trinidad during the latter part of August, but was denied entry and reshipped on board the vessel.

Vacations.--Frank H. Rose, protector of National Bison Range, Mont., has been spending his vacation at Yellowstone National Park and Vicinity.

Fred M. Dille, protector of Niobrara Reservation, Nebr., spent his vacation at Boulder, Colo.

New Regulations Issued for Aleutian Islands Reservation.--Revised regulations for the administration of the Aleutian Islands Reservation, Alaska, were approved by the Secretary on September 14, covering matters under the jurisdiction of the Biological Survey. Matters concerning the Bureau of Fisheries are covered by separate revised regulations issued by the Department of Commerce. The new regulations thus supersede the joint regulations of the two departments issued on April 30, 1921. They contain no radical changes and will simplify administrative details on the reservation. Sheep and other livestock introduced within the reservation under grazing permits must now be free from external parasites, including lice, scab mites, true ticks, and sheep ticks (Melophagus ovinus). Except on Unimak Island and on islands held under permit for fur farming, natives resident within the reservation are allowed to take game animals, game birds, and land fur-bearing animals in accordance with the Alaska game law and regulations, without permit. The regulations also require that dogs shall not be allowed to run loose within the reservation at a distance of more than one mile from the center of any village, and that a permit shall be obtained to possess or maintain dogs on Unimak Island, but outside of Unimak Island dogs may be possessed without permit for purposes of sheep-herding, for use as pack animals, or for pulling sleds. The new regulations of this Department have been mimeographed for use until the printed supply can be received.

Treaty-Act Cases Terminated--Reports Received During August

<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Linebaugh, Silvers**	1	Tennessee	Killing ducks from a motor boat	\$25
McCarley*	1	Florida	Killing coots from a motor boat	\$5
Perry	2	Tennessee	Killing doves in close season	\$100 each
Stadlmeir, Pierce*	1	New Jersey	Hunting ducks from a motor boat	\$5
Riddick	1	Texas	Hunting doves in close season	\$10

Cases Reported for Prosecution

<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Holland*, Schrieber**, Pertuit**	1	Louisiana	Selling ducks
Kelsey, Bennett*, Belcher***, Garner***	2	Florida	Killing egrets, possessing their plumes, and hunting on a Federal reservation
Linebaugh	1	Tennessee	Killing and possessing 4 wood ducks
Perry	2	"	Killing and possessing doves in close season
Riddick	1	Arkansas	Killing an American egret
Shaver, Rogalla***	1	Minnesota	Selling wild ducks and coots
Steele	3	Oregon	Hunting and possessing ducks in close season
Whitehead, Hutson*, Martin**	1	So. Carolina	Shooting and wounding a wood duck and hunting on a Federal reservation
Whitehead, Michael**	1	Georgia	Hunting and possessing 2 mourning doves

* U. S. Deputy Game Warden.

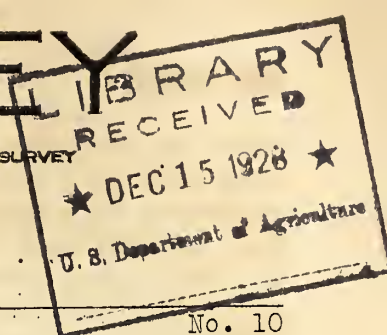
** Deputy State Game Warden.

*** Cooperator.

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THE SURVEY

ISSUED MONTHLY FOR THE PERSONNEL OF THE BUREAU OF BIOLOGICAL SURVEY
UNITED STATES DEPARTMENT OF AGRICULTURE



Vol. 9

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No. 10

GENERAL NOTES

National Committee on Wild-Life Legislation Organizes. - At the national gatherings in Seattle, Wash., last August, of international and western game commissioners and other conservation organizations, there was created a National Committee on Wild-Life Legislation, which met in Washington on October 12, and perfected the following organization: Chairman, Dr. T. Gilbert Pearson, representing the National Association of Audubon Societies; Vice Chairman, Carlos Avery, representing the American Game Protective Association; Secretary, Seth E. Gordon, representing the Izaak Walton League of America; and Treasurer, Dr. John C. Phillips, representing the American Wild Fowlers. Other members of the Committee are George D. Pratt, representing the American Forestry Association; E. Lee LeCompte, State game warden of Maryland, representing the International Association of Game, Fish, and Conservation Commissioners; R. G. Parvin, State game and fish commissioner of Colorado, representing the Western Association of Fish and Game Commissioners; I. Zellerbach, of the California Game and Fish Commission; I. T. Quinn, State game and fish commissioner of Alabama; Keith McCanse, State game and fish commissioner of Missouri; and Gustavus Pope, of Detroit.

An important action of the Committee was the decision to support in principle, and take as its first order of business, the Norbeck Migratory-Bird Refuge Bill, which has passed the Senate and is now pending in the House. It is stated that certain minor amendments will be suggested by the Committee to make the bill effective. As the bill now stands, Congressional appropriations would replace the Federal hunting license formerly proposed, and the refuges would be established as inviolate sanctuaries instead of being associated with public hunting areas administered by the Federal Government. The Committee will again meet in December in New York City, when it will announce more detailed plans. Among government officials invited to appear before the Committee at the October meeting was Mr. Redington, who spoke briefly on the importance of wild-life refuges.

Radio Talks for November Announced. - Members of the Bureau who are also radio fans may wish to tune in on some of the Biological Survey talks broadcast as a part of the Department's 1928-29 radio program. "Game Laws for 1928-29," "Livestock Predators," and "Wild-life Reservations" are the titles of talks broadcast on October 11, 23, and 30, respectively. The following talks are scheduled for November:

Rat and Mouse Control about the Home	November 1
Cottontail Rabbits	November 13
Selection of Furs	November 20
Trapping	November 29

These information talks are broadcast through more than 100 selected radio sta-

tions in 40 States. An additional feature of the Department's radio program this year is a five-day-a-week broadcast direct from Washington to the radio audiences of a network of 16 stations, chiefly in the Middle West, associated with the National Broadcasting Company. This broadcast is scheduled at 12:15 to 12:30 p.m., Central Standard Time.

In this latter service, the Biological Survey has two contributions scheduled for November: On November 1, Frank L. Earnshaw, of the Division of Game and Bird Conservation, will talk on "Federal and State Laws for the Conservation of Wild Life;" and on November 15, Dr. W. B. Bell, in charge of Biological Investigations, will speak on "Tularemia--a New Animal-Borne Disease." Further talks of interest to members of the Survey will be announced in next month's issue.

Visitor. - Dr. D. N. Kashkarov, professor of zoology in the Middle Asiatic State University at Tashkent, Turkestan, was a visitor at Bureau offices on September 28. He was interested chiefly in life-zone, ecological, and ornithological investigations.

Congratulations. - Members of the Survey are extending congratulations to Mr. and Mrs. Paul H. Oehser on the birth of a son October 31. Mr. Oehser is the Assistant Editor of the Bureau.

Official Publications. - The following official publication of the Biological Survey was issued during the month:

Fur Laws for the Season 1928-29. Farmers' Bulletin No. 1576. By Frank L. Earnshaw and Frank G. Grimes. 29 p. Received October 24.

Outside Publications. - The following articles by members of the Biological Survey appearing in outside publications have been reported during the month:

- Ashbrook, Frank G. Furring Pens for Foxes. The Black Fox Magazine, vol. 12, no. 6, p. 3-4. July, 1928.
- . Developments in Fox-Farming. The Farm Journal, vol. 52, no. 11, p. 17-18, illus. November, 1928.
- Ashbrook, Frank G., and Karl B. Hanson. Feeding Vixens and Pups. The Black Fox Magazine, vol. 12, no. 6, p. 24. July, 1928.
- Denmead, Talbott. Duck Blinds and Decoys. Forest and Stream, vol. 98, no. 11, p. 690-691, 724, illus. November, 1928.
- . Real Sport. Hunter, Trader, Trapper, vol. 57, p. 17-22, illus. November, 1928.
- Earnshaw, Frank L. Department of Game and Fish Laws: Interstate Commerce in Wild Animals. Field and Stream, vol. 33, no. 6, p. 66-68. October, 1928.
- . Department of Game and Fish Laws--Accidents and Fatalities. Field and Stream, vol. 33, no. 7, p. 80-81. November, 1928.
- Gabrielson, Ira N. Turning Pests into Profits. Forest and Stream, vol. 98, no. 11, p. 686-687, 730-731, illus. November, 1928.
- Knappen, Phoebe. Suggestions for a Bibliography on Avian Longevity and on the Weight of Birds; and Food of Bonasa umbellus. The Auk, vol. 45, no. 4, p. 492-496 and 513-514, respectively. October, 1928.

- Lincoln, Frederick C. Prothonotary Warbler Breeding in the Washington Region. Proceedings Biological Society of Washington, vol. 41, p. 172. October 15, 1928.
- A Bibliography of Bird Banding in America. Special Supplement to The Auk, vol. 45; Contribution No. 15 of the Baldwin Research Laboratory, p. 1-73. October, 1928.
- Lincoln, Frederick C. Bird-Banding in America. Annual Report Smithsonian Institution for 1927, Publication 2942, p. 331-354, illus. 1928.
- [Wetmore, Alexander, and] Frederick C. Lincoln. The Dickcissel in Maryland. The Auk, vol. 45, no. 4, p. 508-509. October, 1928.
- Malloch, J.R. The Hawaiian Species of the Genus *Lispocephala* Pokorny (Diptera; Anthomyiidae). Proceedings Hawaiian Entomological Society, vol. 7, p. 67-89. June, 1928.
- McAtee, W. L. Leffingwell on the Pheasant; Barros on Food of Chilian Birds; Economic Ornithology in Recent Entomological Publications; and Encouraging Bird Enemies of Orchard Insects. The Auk, vol. 45, no. 4, p. 525-528. October, 1928.
- Food Habits of the Mallard Ducks of the United States. The Game Breeder, vol. 32, no. 9, p. 269-270, 273-282. September, 1928.
- Murie, Olaus J. Notes on the Alaska Chickadee. The Auk, vol. 45, no. 4, p. 441-444. October, 1928.
- Oberholser, Harry C. The Tiger Eitern. Nature Magazine, vol. 12, no. 5, p. 315, illus. November, 1928.
- Palmer, T. S. Notes on Persons Whose Names Appear in the Nomenclature of California Birds. The Condor, vol. 30, no. 5, p. 261-307, illus. September-October, 1928.
- Review of Boyson's "Falkland Islands"; and Stone on a Collection of Birds from Para, Brazil. The Auk, vol. 45, no. 4, p. 515-516 and 523-524, respectively. October, 1928.
- Preble, E. A. Predatory Birds and Game. Nature Magazine, vol. 12, no. 3, p. 194-195. September, 1928.
- California's Mammals--Past and Present. Nature Magazine, vol. 12, no. 4, p. 259-261, 275, illus. October, 1928.
- Redington, Paul G. Conservation of Wild Life in Alaska Furthered by Cooperation. United States Daily, vol. 3, no. 179, p. 1 and 12. October 2, 1928.
- Reduce Losses by Rodents and Predatory Animals. The American Hereford Journal, vol. 19, no. 12, p. 132, 134. October 15, 1928.
- Sheldon, H. P. Bot-trotting in Maryland. Field and Stream, vol. 33, no. 7, p. 22-23, 62-64, illus. November, 1928.
- Young, Stanley P. [and Arthur H. Carlhart]. Rangeland Renegades: Whitey of Bear Springs Mesa. Blue Book Magazine, vol. 48, no. 1, p. 48-51, November, 1928.

BIOLOGICAL INVESTIGATIONS

Observe Waterfowl on Potomac. - Dr. H. H. T. Jackson and Dr. W. B. Bell made the October 13 waterfowl census on the Potomac between Washington and Wide-water. The total count recorded was about 23,000, of which about 6,000 were coots. More than 10,000 black ducks and about 2,400 canvasbacks were the next in point of numbers. Other birds observed included ring-billed, herring, and laughing gulls; Caspian and common terns; great blue and little blue herons; a horned grebe, and a double-crested cormorant.

Studies Deer Situation in Pennsylvania. - Vernon Bailey, at the request of the State Conservation Department, was detailed to northeastern Pennsylvania, in mid-October, to make a brief survey of the deer situation there in connection with the plan for an open season from December 1 to 15 on does only and in limited numbers. The shooting of bucks during the past 20 years has kept down the number of breeding males and thus greatly disturbed the proportion of the sexes. Under the change it will be possible to drive the does from fields and orchards, and the young bucks will have a chance to grow to breeding age. Mr. Bailey considers that the change will be beneficial generally and will result in an increased fawn crop for the following year.

Forage Conditions on Elk Ranges Studied. - O. J. Murie, assisted by Adolf Murie, spent a few days early in September in the northern part of Yellowstone Park and adjoining parts of Montana in studying elk ranges, with special reference to forage conditions. During the remainder of the month they studied the Jackson Hole elk on their breeding grounds, especially in the southeastern part of Yellowstone Park and the region to the southward.

Taylor Completing Reports. - Dr. W. P. Taylor, during September, worked toward the completion of a number of reports, including those on the mammals of Washington and the results of work with the porcupine. Field activities included local biological work. The last ten days of the month were largely occupied in a trip to the Southwestern Forest Experiment Station at Flagstaff, where he addressed the Junior Ranger Training Camp and the Flagstaff Game Protective Association on forest and range biology and on the economic value of wild life. The experimental plots at Seligman, Williams, and Coconino Wash., Ariz., were also inspected.

To Obtain Seal Stomachs for Study of Food Habits. - Theo. H. Scheffer is continuing arrangements to obtain a series of stomachs of the harbor seal of the northwest coast, in order to have first-hand information of its food habits. An attempt is being made to take these throughout the year, and at such times and places as will best show the actual relation of the animals to the more valuable food fishes, especially at spawning time. This work has been conducted in cooperation with the Division of Food Habits Research.

Addresses Biological Society. - Arthur H. Howell addressed the Biological Society of Washington at its first meeting of the year on October 20 on the subject "Animal Life in a North Carolina Forest." His talk was illustrated with lantern slides.

Russian Zoologist Dies. - Word has been received of the death, by pneumonia, on September 29, of Dr. Peter P. Sushkin, Russian zoologist, whose visit to this country a couple of years ago is remembered so pleasantly by American naturalists.

FOOD HABITS RESEARCH

Plan Quail Study in the Middle West. - H. L. Stoddard, in charge of the Georgia headquarters of the Cooperative Quail Investigation, conferred with officials of the Bureau and others interested in the investigation on October 9 and 10. He then left for Columbus, Ohio, to begin a tour of inspection with

Aldo Leopold of areas in the mid-western States for the purpose of formulating a program of quail study to be conducted under the auspices of the Institute of Small Arms Manufacturers in cooperation with a number of State universities and the Biological Survey. While on this trip Messrs. Stoddard and Leopold will confer with university officials in Ohio, Michigan, Wisconsin, Minnesota, and Iowa, as well as with others interested in such a study, which is planned to be carried out along lines developed in the quail study in Georgia.

FUR RESOURCES

Inspects Rabbit Skins Shipped from Fontana. - Mr. Ashbrook spent October 8 and 9 in New York City examining the 7 bales of rabbit skins shipped there from Fontana, Calif. The skins were assorted and graded by Mr. Ashbrook and John W. Meyer in Fontana. Officials of the auction company, where the skins were sold, expressed favorable comment as to quality and uniformity of classes and grades.

Exhibit at Pomona Fair. - To illustrate the experimental rabbit work in progress at the United States Rabbit Experiment Station, an exhibit was made at the Pomona Fair, Pomona, Calif., September 17 to 22. Mr. Meyer reports that the exhibit was well received by the public and that it accomplished its purpose in disseminating information among local rabbit breeders and gaining support for the work that is being carried on.

Chief's Parents Visit Fontana. - Mr. Redington's father and mother, Mr. and Mrs. E. D. Redington, in company with T. T. Redington, the Chief's brother, visited the United States Rabbit Experiment Station at Fontana, Calif., on October 8. Mr. Meyer was delighted to receive them and stated that they were much interested in the work being done at the station.

Visit Fur-Animal Station. - Dr. Ned Dearborn, formerly with the Bureau and now a professor in the School of Forestry and Conservation of the University of Michigan, and Dr. G. Ennis Smith, in charge of the Canadian Fox Experiment Station at Summerside, Prince Edward Island, Canada, were recent callers at the U. S. Fur-Animal Experiment Station at Saratoga Springs, N. Y.

ECONOMIC INVESTIGATIONS

Mr. Young Returns to Washington. - Mr. Young returned to headquarters on October 15 from an extended trip, during which he had very satisfactory contact with most of the Division's field men and many of its cooperators. He reports that excellent progress is being made in field operations and expresses his appreciation of the cooperation he received from district leaders and other field men in making it possible for him to get a clear idea of field operations. His personal contacts with the men have done much to clear up satisfactorily certain personnel matters.

Seriously Ill. - Word has been received that Miss Hannah C. Higginbottom, clerk in the California district, who has been seriously ill and has gone to Kansas City to be with relatives, is now improving in health. It is hoped that entire recovery will soon be possible.

Erosion Stopped by Prairie-Dog Control. - L. L. Laythe, leader of predatory-animal and rodent control in the Colorado district, reports that the supervisor of the Rio Grande Forest, on a trip in the southern end of the forest this year, planned to establish some camera points showing the erosion caused by prairie dogs. The area selected was treated for prairie dogs last year, and upon his visiting the locality one year after treatment, he could not take the pictures he desired, because the clean-up of prairie dogs had let the vegetation come back to such an extent that the ground was not visible.

Two Wolves Caught in Oklahoma. - J. C. Gatlin, leader of predatory-animal control in the Oklahoma-Arkansas district, reports that Hunter Ed Hines, working southeast of Talihina, Okla., caught a pair of wolves that had done \$600 damage to livestock in that locality this summer. The male had apparently been caught in a trap before and had escaped, as two toes were missing. Mr. Hines states that this wolf was one of the largest he had ever caught.

Rabies in Washington. - Dr. Glenn R. Bach, leader of predatory-animal control in the Washington district, reports that on August 20 the head of a calf suspected of having rabies was sent to the State Department of Health from Wenatchee, Wash., and on examination proved positive for this disease. It is thought that the calf had been bitten by a rabid coyote. Every effort was made to reduce the number of coyotes to a minimum in that section, and no further cases were reported. Doctor Bach also states that on September 5 a coyote's head was sent to the States Department of Health from Odessa, Wash., which on examination at the laboratory proved positive for rabies. It is not known whether this coyote had bitten any livestock, but two hunters extended their trap lines in that vicinity, and no further cases of rabies have been reported either among coyotes or domestic animals.

Bubonic Plague in California. - Joseph Keyes, leader of rodent control in the California district, reports that the finding of California ground squirrels positive for bubonic plague, in addition to two human cases of the disease--a corporal of the presidio in Monterey County and a Mexican girl in Santa Barbara County--both of which terminated in death, has created a serious situation in the coastal section of California. No ground squirrels positive for plague have been taken from Santa Clara, Santa Cruz, or Santa Barbara Counties, although surrounded by infection. This is a direct result of the intensive rodent-control operations that have been undertaken by these counties. An immediate area within and adjacent to the Gigling Military Reservation in Monterey County, where one of the fatalities occurred, was treated for squirrel control. Assistant Hansen, aided by the local office of the Monterey Horticultural Commissioner and a detail from the presidio, treated the entire infested area of the reservation. The commanding officer of the presidio had made preliminary arrangements with a private contractor to treat the reservation at a contract price of \$2,100. The job was completed by Mr. Hansen required less than \$30 in cash, although \$2,000 was made available. Here is concrete savings to the government of more than \$2,000.

Hunts Coyotes from Airplane. - Albert M. Day, leader of predatory-animal and rodent control in the Wyoming district, recently received a letter from his assistant, H. P. Williams, which reads in part as follows: "This morning I made an experiment of hunting coyotes in an airplane. I took six coyotes in one hour and thirty minutes. I saw four more coyotes and failed to get them, due to the plane's being too heavy and not suited for maneuvering. I believe if we had a plane suitable for this work, one with landing speed of about 35 to 40 miles an hour, we could average 100 coyotes per month, and could pay all expenses as well as for the ship during the fur season, besides supervising the hunters."

More Cooperative Funds in Wyoming. - Mr. Day reports that much interest in predatory-animal work is being manifested in Wyoming. Many new associations and counties are cooperating with the Bureau in matching funds for hunters to work under government supervision. Where such funds are made available hunters are employed on association or county funds and are given the same supervision and help that the regular hunter force receives. Poison, traps, and ammunition are furnished these men, and all skins taken become the property of the association or county. On this basis the Rock Springs Grazing Association of Sweetwater County is supplying four hunters; the Lincoln County Association three; Carbon County Woolgrowers three; Niobrara County Woolgrowers one; the County Commissioners of Niobrara County one; Weston County Commissioners one; Crook County Commissioners one and half of another hunter's salary; Campbell County Woolgrowers two; and Sheridan County one. Converse County Woolgrowers will probably employ one man and the County Commissioners another. In all counties where such an arrangement is in force, the State and Federal Governments are supplying a like number of hunters.

Mr. Day also states that according to present plans Wyoming will take advantage of the Idaho mixing plant for rodent poison. To eliminate the high freight rate on the mixed bait, two carloads of crushed oats will probably be shipped to Cheyenne and there mixed and redistributed to points in the field.

Coyote Record Broken in Wyoming. - Lawrence Cheney, a hunter on the Rock Springs Grazing Association payroll under the supervision of the Biological Survey, broke all previous records during the month of September by taking 71 coyotes and 4 bobcats, according to Mr. Day.

Depredations by Skunks on Bees. - M. E. Musgrave, leader of predatory-animal control in the Arizona district, reports that his office was asked by an apiarist to give assistance in the eradication of skunks that were eating his honey bees. A mixture of ground-pork cracklings and strychnine was furnished him with instructions for its use. The first night four skunks were killed, and later seven others. It is interesting to note, says Mr. Musgrave, that these 11 skunks were killed in an area that has been worked with poison each winter for several years, which will prove to a certain extent that the poisoning work against predatory animals is not destroying the small fur bearers. It would be difficult to estimate the loss to bee men in Arizona due to the depredations of skunks. Mr. Musgrave gives an interesting account of how the skunk catches bees, as he saw them on two bright moonlight nights. The skunk would come to the front of the hive and commence tapping with its front feet and claws. When the

bees, cold and sluggish, came out to investigate, they were easily lapped up by the skunk as fast as they appeared in the opening. The stomach of one skunk examined by Mr. Musgrave contained 265 bees that were identified, and the remainder of the contents was of partly digested bees. Skunks have been known totally to exterminate bee colonies in Arizona.

GAME AND BIRD CONSERVATION

On Vacation. - Mr. Sheldon is spending a month's vacation in Vermont.

Addresses Walton League Convention. - Talbott Denmead represented the Survey at the convention of the Pennsylvania State Division of the Izaak Walton League of America, held in Harrisburg, Pa., October 8 and 9, and addressed the meeting on changes in the Federal regulations affecting Pennsylvania. While in Harrisburg he visited the offices of the State game commission and also the recently established city zoo.

Another Deputy Shot. - U. S. Deputy Game Warden George Thompson, of Gridley, Calif., was shot and instantly killed near Fennington, Sutter County, Calif., on September 7 while in the performance of duties as State game warden. It is understood that Charles Hogeboom, on whose father's ranch the shooting took place, admitted the slaying, claiming that he did it in self defense. The safety catch had been thrown off a .22 automatic pistol that Mr. Thompson had in his hand, but the weapon had not been fired. He had been struck twice, and indications were that he had grabbed his pistol after one of the shots had been fired. It is understood that the slayer is being held in a padded cell in the Sutter County Hospital. Mr. Thompson had been a game warden for 7 years and had made his home in Gridley for the past 24 years. He is survived by his wife, three children, his parents, and several brothers and sisters, to whom the Survey extend sympathy in their bereavement.

Hunting Popular as Season Opens in Kansas. - Game Protector O. D. Steele reports that in the Cheyenne Bottoms, near Hoisington, Kans., on Sunday, September 16, the opening date for hunting ducks, he was out at 3:10 a.m. for breakfast, and every restaurant and eating house in town was jammed, so that he had to stand in line. Hardware stores were doing a thriving business, selling cartridges and hunting licenses. It was estimated that there were fully 10,000 ducks on the 42 flooded sections, and about 900 to 1,000 hunters. The estimated kill was about 1,000 ducks. Of the numbers of hunters checked up by Mr. Steele and a State game warden, only two were found with 15, the legal bag limit, and about 50 per cent of the hunters had not killed a duck. Most of the birds were locally bred mallards, pintails, widgeons, and teal, the last being the most numerous.

Tells of Florida Hurricane. - An interesting report on the hurricane that struck Florida on September 16, with the resultant loss of life and property, was furnished the Survey by Game Protector J. V. Kelsey about a week after the storm. He stated that the greatest loss of life was along the eastern shore of Lake Okeechobee and that it would never be known just how many persons were killed, but probably at least 1,500 bodies would be found. On September 23,

200 bodies were found floating in Pelican Bay, on Lake Okeechobee, where Protector Kelsey has done considerable work. Tales of horror and suffering were to be heard everywhere. Although Lake Okeechobee was 2 feet lower than when the storm of September, 1926, struck, the water rose over the dikes and lowlands to a depth of 9 feet within 10 minutes, and inhabitants of this area were drowned like rats in a trap. Added to the rush of waters was a wind that wrecked practically everything that stood in its path. He stated that the loss of both life and property was much greater than in the 1926 storm. One family residing on Torry Island escaped, but were practically the sole survivors of the island. Many of Mr. Kelsey's acquaintances, including some of his intimate friends, were drowned. All of the buildings on the island were leveled to the ground, including one that had withstood the storms of two years ago, belonging to the family that escaped. According to reports, the Seminole Indians were practically intact. Mr. Kelsey stated that what the storm did to the bird life of the Everglades was yet to be determined, but from his own observation, even as far north as his headquarters, Daytona Beach, egrets were scattered everywhere and undoubtedly some loss resulted.

No Damage by Hurricane at Tampa Bay. - Protector Harold P. Bennett reported on September 30 that no damage was done by the recent storm at the Tampa Bay group of refuges, Fla., and that the winter birds were returning.

Large Numbers of Herons Seen in Florida. - On October 14 Mr. Kelsey made a trip through the Lake Okeechobee section, and reported that he witnessed a rare and beautiful sight, one that a bird lover might expect to see but once in a lifetime. At a point approximately 10 miles east and north of Belle Glade, Palm Beach County, and as far as Pahokee, in all a distance of about 25 miles, there were thousands of American egrets and snowy herons, stretching away into the overflowed country as far as the eye could see. He reported that it was impossible to estimate anywhere near the total numbers of these beautiful birds. Among them he saw a dozen great white herons, and within 100 yards of Belle Glade not less than 300 snowy herons fed unmolested. Mr. Kelsey could give no reason why these birds should be gathered in such vast numbers in this territory, but stated that they represent positive proof that the plume birds of Florida have not reached the point of depletion that some people believe.

Tule Lake Refuge Established in California. - By Executive Order of October 4, 1928, President Coolidge created the Tule Lake Bird Refuge in northern California. The new refuge consists of 10,300 acres of Government lands in northeastern Siskiyou County, Calif., within the Klamath Irrigation Project. These lands are flooded to a considerable extent by waste water and thus form an excellent waterfowl resort. Tule Lake has long been a mecca, especially during the autumn months, of such birds as the pintail, mallard, red-head, ruddy duck, and cinnamon teal, and of Canada, snow, white-fronted, and cackling geese, and avocets, stilts, and other shorebirds. It is also an extensive breeding place for many species of marsh birds.

The layout of the area is such, due to mud conditions along the shores, that a natural refuge has existed in the northern part, but sportsmen have in the past found their recreation on other portions. In order not to mete out undue hardship to these sportsmen, it was deemed advisable to allow a contin-

uance of hunting privileges on an area at the southern end of the lake, and accordingly the Secretary of Agriculture on October 10 approved an order permitting hunting on the southernmost 2,800 acres. The inviolate refuge, therefore, comprehends 7,500 acres of land extremely valuable for resting and feeding grounds for the birds which frequent the area.

This refuge, which lies just south of the California-Oregon line, will supplement the Clear Lake refuge in California, just east of Tule Lake, and the recently established Upper Klamath refuge, on the west shore of Klamath Lake, in Oregon. A year ago it was announced that because of lack of water a reflooding program on Lower Klamath Lake, west of Tule Lake, would have to be abandoned. The establishment of the refuge, therefore, on Tule Lake will in a measure offset the loss of possible sanctuary caused by the abandonment of the Lower Klamath project.

Niobrara Notes. - Reservation Protector Fred M. Dille reports the death of one of the female antelope at Niobrara Reservation, Nebr. Two bobcats that recently destroyed three of the young antelope have been caught. Prairie chickens and grouse are scarce in the vicinity, due apparently to some extent to a disease, and many ranchmen in the locality have taken measures to protect the birds. During September, 362 persons visited this reservation.

Visitors Increase at Sullys Hill. - During the year ended September 30, 1928, there were 21,608 visitors, with 4,747 automobiles, at Sullys Hill Game Preserve, N. Dak. This is more than have been to the preserve during any corresponding period in previous years. A waterfowl census taken along the shore of Devils Lake and the small lake within the preserve on September 8 showed more birds than had been seen there at any time during the past summer. Hunters report that prairie chickens are scarce this season in the vicinity of Sullys Hill.

State Preparing to Help Feed Elk. - Protector A. P. Nelson, of the Elk Refuge, Wyo., reports that the State of Wyoming has purchased 514 tons of hay from local ranchmen, with 480 acres of pasture, and has contracted for 500 tons from another ranchman about seven miles south of the town of Jackson, where the State will establish a feeding ground when it becomes necessary to feed the elk this winter. The hay that is being purchased in the vicinity of the refuge will be fed to the elk on the refuge. The State Game Department of Wyoming, assisted by the Forest Service, has put in five temporary rearing ponds for fish in a large spring near the refuge headquarters. In these ponds have been placed about 70,000 small fishes, which were obtained from the Yellowstone Park Fish Hatchery.

Dam Constructed at Big Lake. - Another small dam has been constructed at the north end of Big Lake Bird Reservation, Ark., for the purpose of maintaining the water in the lake at a satisfactory level.

Fire at Concomully. - Fire burned over the southeastern quarter of Concomully Bird Refuge, Wash., last month, killing most of the young trees on the slopes of Salmon Creek. Also about 2,000 acres southeast of the refuge were burned over, but little damage, if any, was done to the game on the reservation.

Alaska Game Commissioners. - With the appointment by the Secretary of Agriculture on September 27, 1928, of a representative from the Second Judicial Division of Alaska, the personnel of the Alaska Game Commission is now complete, as follows: William E. Selfridge, member from First Judicial Division and Chairman of the Commission; Frank P. Williams, Second Judicial Division; William H. Chase, Third Judicial Division; Irving McK. Reed, Fourth Judicial Division; and Hugh W. Terhune, representative of the Bureau of Biological Survey, and Executive Officer, Fiscal Agent, and Secretary of the Commission.

Other Appointments. - The following appointments have been made for the Upper Mississippi Wild Life and Fish Refuge: A. J. Cheney, Homer F. Hall, and William E. Patterson, junior reservation rangers and U. S. deputy game wardens; John A. Sauer, junior reservation ranger; Ed O'Riley, Jr., and Sam Pritchard, deputy reservation rangers and U. S. deputy game wardens. Silas W. Kilgore, an employee of the Reclamation Service, has been appointed deputy reservation warden and U. S. deputy game warden at Clear Lake Bird Reservation, Calif. William E. Hubbard has been appointed deputy reservation warden and U. S. deputy game warden at the Dungeness Spit Bird Reservation, Wash., to serve during the hunting season; Leslie Bowen has been appointed hydrographer and instrumentman in connection with the work of establishing the Bear River Bird Refuge, Utah.

Back from Atlantic City. - Miss Clara Ruth of this division, who has been away from the office since September 6, returned to duty on October 22, after five weeks' illness and a week spent at Atlantic City, N. J., to recuperate.

Violators Prosecuted. - Interesting cases recently closed, two of which were in State courts, are as follows: Three offenders arraigned in Federal court at New Orleans, La., in September, charged with possessing ducks in close season were each given a 6 months' suspended jail sentence; these defendants were apprehended by State Agent St. Germain and the evidence submitted by Federal Deputy Holland. Charged with killing and possessing wild ducks in close season, three offenders were arraigned in Federal court at Lincoln, Nebr., in October, entered pleas of guilty, and after being severely lectured were fined \$25 each, together with costs amounting to \$53.95 each, or a total of \$236.85; the witnesses in these cases were Federal Deputy Bunney and State Deputy Ling and the evidence was submitted by Protector Holmes.

Twelve persons apprehended in Arkansas by Protector Riddick, Federal Deputy Thomason, and State Deputy Albright for killing and possessing night-hawks were arraigned in State court and fined \$10 each and costs in the amount of \$4.80 each, or a total of \$177.60. Two nonresidents, from Oklahoma, apprehended by Protector Riddick, when arraigned in State court in Arkansas charged with hunting without licenses, were required to pay fines of \$150 and costs of \$14.50 each.

Treaty-Act Cases Terminated -- Reports Received During September

<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Barmeier	1	Missouri	Possessing ducks in close season	\$20
"	1	Illinois	Killing ducks in close season	\$50
Barmeier, Ferrier*	1	"	Killing ducks in close season	\$50
" "	2	Missouri	Hunting after sunset and pos- sessing wood ducks	\$25 each
Birsch, Bonner*	1	North Carolina	Hunting ducks from a motor boat	\$25
Bunney*, Ling**, Holmes	3	Nebraska	Killing ducks in close season	\$25 each and costs of \$53.95 each
Creighton*	3	District of Columbia	Killing reedbirds	\$10 each
Holland*, St.Germain**	3	Louisiana	Possessing ducks in close season	6 months each in jail, suspended
Linebaugh	1	Tennessee	Killing and possessing wood ducks	\$50
Riddick, Harris*, Thomason**	2	Arkansas	Possessing meadowlarks	\$10 each
Stadlmeir	1	Delaware	Killing a swan	\$5
Whitehead	1	Georgia	Killing doves in close season	\$5
Whitehead, Saye*	1	"	Possessing a dove in close season	\$5

* U. S. Deputy Game Warden

** Deputy State Game Warden

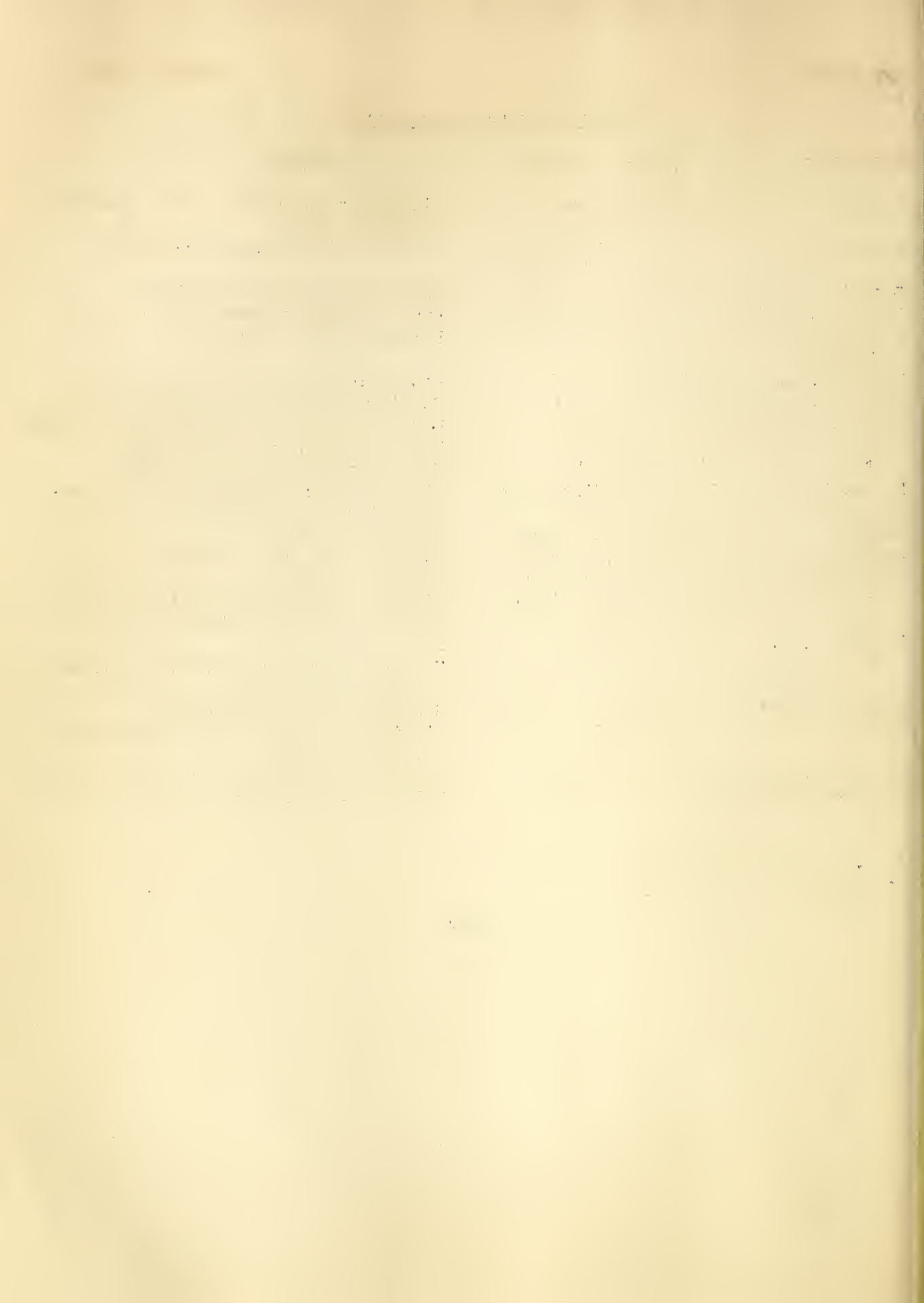
Cases Reported for Prosecution

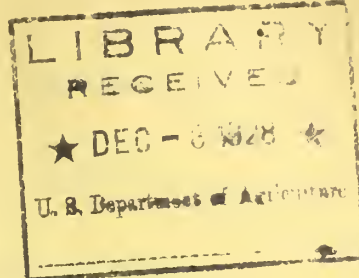
<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Clarkson	1	Texas	Killing coots in close season and possessing willets
Creighton*	3	District of Columbia	Killing and possessing reedbirds
Gieseler*, Scholler*	1	Illinois	Shooting and killing a bittern
Holland*, Nugier**,	4	Louisiana	Hunting mourning doves after sunset
Holland*, Pertuit**, Wendell**	1	"	Purchasing wild ducks
Holland*, St. Germain**	3	"	Possessing ducks in close season
Holland*, Thompson*	1	"	Killing and possessing mourning doves
Holmes, Hough**	2	Iowa	Hunting wild geese and possessing grebes
" "	1	"	Hunting wild ducks after sunset
" "	2	"	Hunting wild ducks after sunset
Perry, Tomlinson**	3	Mississippi	Killing doves in close season and exceeding the bag limit
Roahen	1	Illinois	Killing a heron
Smith	1	Maine	Hunting doves after sunset
Stadlmeir	1	Delaware	Killing a swan
"	1	New Jersey	Killing and possessing a plover and shooting at yellowlegs
Steele, O. D.	1	Kansas	Selling wild ducks
"	1	"	Hunting sandpipers and yellowlegs and killing a sandpiper
Steele, Nill**	1	"	Shooting and killing a gull
Tonkin	2	Nevada	Killing and possessing mourning doves in close season
Whitehead, Howard**	2	Georgia	Killing mourning doves in close season
Whitehead, Martin**	1	"	Killing night herons

* U. S. Deputy Game Warden

** Deputy State Game Warden

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UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF BIOLOGICAL SURVEY

CONFIDENTIAL SUPPLEMENT TO THE SURVEY
For Assistants in Charge of Field Offices

No. 2

November 26, 1928.

1. CONFIDENTIAL NATURE OF MATERIAL.--Reference is made to item No. 1 of Supplement No. 1, of May 14, 1928, in which it is stated that administrative information contained in the Confidential Supplements must be strictly limited to Washington and field offices of the Biological Survey.

2. CONCERNING ATTACKS ON THE BUREAU AND THE CHIEF.--The following letter, indicating the attitude of the Survey, has been written to one of our correspondents, and is here quoted for the information of field leaders who may have noted attacks made on the Bureau and on the Chief personally:

"The sentiment expressed is very much appreciated. Because of the character of the attacks made on the Biological Survey, I have deemed it unwise to reply to Mr. McGuire, the publisher of "Outdoor Life," on the 15 bag limit.

"With reference to the advisability of reducing the bag limit on migratory waterfowl, I may say that the conflicting opinions regarding the increase or decrease of wild fowl when I entered the Survey more than a year ago demonstrated the necessity for obtaining the best estimate that could be made by competent observers of the abundance of the birds over a period of years. Briefly, this resulted in the waterfowl census project, concerning which, no doubt, you have seen items in the newspapers and magazines. This project is being conducted through the cooperation of approximately 3,500 people throughout the United States and Canada, each of whom on a certain day each month counts or estimates the numbers and species of wild ducks, wild geese, and other migratory wild fowl found on certain designated areas in their immediate sections. Thus, we are obtaining a large quantity of very valuable and reliable data. If, when sufficient returns have been received from the censuses for comparative purposes, there appears to be a need for additional regulations to protect the waterfowl, such as reducing the bag limit, shortening the season, etc., appropriate action will be recommended. I desire, however, to have information of such a reliable nature that when a decision is made on the basis of such information it will not be subject to justifiable indictment by one or more of the many elements and interests that are concerned with the welfare of wild fowl.

"In my opinion, there are other angles of this matter of more vital import to the waterfowl than a reduction in bag limits. One of these is the need of suitable areas for breeding and resting places to which the migratory game birds can repair without fear of molestation on their flights north and south. Drainage operations on a huge scale have done much to reduce the number of marshland and other suitable areas available for the use of wild life, and it is of primary importance that some of these remaining areas be acquired

as permanent refuges if the supply of migratory game birds is to be maintained for posterity."

3. PRIVATE ACTS OF FIELD LEADERS THAT MAY BE CONSTRUED AS OFFICIAL.--

One of the United States Game Protectors in attendance at a recent meeting of a State game-protective association as delegate from the city in which he is officially stationed, spoke briefly against a resolution before the association that involved a recommendation to this Department to open to public shooting a portion of a Federal bird reservation. The resolution failed to be approved. This has resulted in correspondence with the Department of a rather embarrassing nature.

While the Survey does not object to its Game Protectors or other field leaders becoming members of game-protective associations--to the contrary, it favors such activity on the part of these officers-- it is important, where resolutions are being discussed in which the field man himself may be construed to be a representative of the Survey and as such to be making a recommendation in the matter, that he take no part in the discussion except to answer specific inquiries. He should also refrain from voting on such resolutions.

In other words, a United States Game Protector in an instance like that described above, even though present as a delegate at a game-protective association meeting, can not satisfactorily separate his personal from his official status. It is desired, therefore, that the policy indicated above be followed in future.

4. STATUS OF REPORT TO CONGRESS ON PREDATORY-ANIMAL CONTROL PROGRAM.--

In the current (1929) appropriation bill a proviso is entered in connection with items affecting the Biological Survey, "that the Secretary of Agriculture shall investigate and report to the next regular session of Congress as to the feasibility of a five-year cooperative program, or a program extending over such term of years as to him shall seem most advisable for the purposes in view, for the eradication, suppression, or bringing under control of predatory animals within the United States, and the estimated cost thereof as compared to the present method." A report on the matter has been prepared in the Bureau and on November 22 was approved by the Secretary and forwarded to the President of the Senate and the Speaker of the House of Representatives. This will be made public after Congress convenes in its second session, which begins on December 4. The program if favorably acted upon by Congress would involve additional Federal expenditures as follows:

	Allotments from appro- priations for 1929	Annual ap- propriations required un- der 10-year program	Increase over funds now avail- able
Control of stock-kill- ing wild animals ...	\$346,867	\$782,500	\$435,633
Control of smaller predators (rodents).	<u>219,737</u>	<u>596,200</u>	<u>376,433</u>
Totals	\$566,634	\$1,378,700	\$812,066

It was recommended that provision be made for the adoption of this

ten year control plan whenever the financial policy of the Government will permit. The report was based chiefly on conferences held and statistical information gathered by Mr. Young during his field trip last summer, in which he made contacts with leaders in most of the Western States. It is anticipated that the report will be printed after Congress convenes, but what action may be taken is of course unknown at this time. If printed, copies will be sent to all field offices.

5. STATUS OF ESTIMATES FOR 1930 APPROPRIATIONS.--The budget for the Fiscal Year 1930, which will not be made public until the convening of Congress in December, is already being given advance consideration by the Appropriations Committee of the House. Hearings on the Department's estimates have been in progress since November 15, and are nearing completion. The Chief of this Bureau and his assistants were before the Committee less than an hour, on November 22.

Increases granted to the Survey by the Bureau of the Budget are small. Under certain subappropriations an increase was granted over the 1929 appropriations, exclusive of the Upper Mississippi and the Bear River Refuges, of \$20,482. To offset this, there was an apparent reduction under certain subappropriations from the 1929 appropriations of \$32,984, resulting in an apparent net decrease of \$12,502. The total reduction of \$32,984, however, includes items amounting to \$31,400 omitted from the amount approved by the Bureau of the Budget for 1930, as representing a dam (\$30,000) and warden's quarters (\$1,400) on reservations, both of which are provided for in the 1929 appropriations. Subtracting, therefore, this \$31,400 from the apparent decrease of \$32,984 results in an actual decrease of only \$1,584, netting on the whole Budget approval an increase of \$18,898 for the regular activities of the Survey.

For the Upper Mississippi River Wild Life Refuge, the budget contains an item of \$190,600 of which \$40,600 is for administration and \$150,000 for land acquisition; and for the Bear River Migratory Bird Refuge, \$75,000. The aggregate of all Survey items is \$1,428,380.

One change of interest in the recommendations is the segregation of the work pertaining to the production and utilization of fur-bearing animals from the item for the food habits of birds and other animals. If approved by Congress, this will place the Division of Fur Resources on an independent basis so far as its appropriations are concerned, which has been desired since its establishment as a separate unit within the Bureau.

6. FORM OF OFFICIAL CORRESPONDENCE.--The general memorandum of June 15, 1927, on the "Classification and Form of Official Correspondence," specified that all letters from field officers to the Bureau should be addressed, "Chief, Bureau of Biological Survey." It is not necessary to indicate in addition that a letter is for the attention of a certain officer, and the practice should be discontinued. On receipt in the Bureau, letters are referred to all officers interested in the contents.

Certain objectionable phrases in letters were noted in a memorandum of October 6, 1928. The following should be discontinued: (1) "I shall be pleased" or "we shall be pleased." A good substitute for this is, "I shall be glad" or "we shall be glad." (2) An expression that involves the use of the words "the same." Instead of "We will endeavor to obtain the same," there

should be substituted, "We will endeavor to obtain this article," or "... to obtain it." (3) The expression "Am recommending such action." Here the personal pronoun, singular or plural, should be used before the verb.

Instead of another expression that is frequently seen in letters, "As per carbon copy inclosed," all that is necessary is the statement that a carbon copy is attached.

Dictators and stenographers should keep in mind the instructions in the memorandum of June 15, 1927, with respect to the complimentary close of letters.

7. FOREST ZOOLOGY.--The editor of the Journal of Forestry has mentioned his desire to publish articles in that Journal on various phases of forest zoology. This opportunity is therefore brought to the attention of the field staff that the members may cooperate in making interesting scientific information thus available. Manuscripts should, of course, be submitted through the Bureau as in the case of others for outside publication. We are indebted to the Journal for this opportunity of bringing our Bureau official information and that of the individual members to the attention of an interested public.

Paul G. Redington
Chief.

THE UNIVERSITY OF CHICAGO
OFFICE OF THE DEAN
CHICAGO, ILL.
JANUARY 10, 1911
TO THE PRESIDENT OF THE UNIVERSITY
FROM THE DEAN
SIR:
I have the honor to acknowledge the receipt of your letter of the 9th inst. and in reply to inform you that the same has been forwarded to the proper authorities for their consideration. I am, Sir, very respectfully,
Yours very truly,
J. H. DILLON
Dean

Original
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THE SURVEY

ISSUED MONTHLY FOR THE PERSONNEL OF THE BUREAU OF BIOLOGICAL SURVEY
UNITED STATES DEPARTMENT OF AGRICULTURE

★ DEC 13 1928 ★

U. S. Department of Agriculture

Vol. 9

Washington, D. C., November 30, 1928

No. 11

GENERAL NOTES.

Survey Represented at A. O. U. Meeting.--The program of the forty-sixth stated meeting of the American Ornithologists' Union held at the Charleston Museum, Charleston, S. C., November 20-22, included the following papers by members of the Biological Survey: "Greetings from the Chief of the Biological Survey, U. S. Department of Agriculture," presented by W. C. Henderson; "In Memoriam--Harry Balch Bailey," by Dr. A. K. Fisher; "An Historical Review of Florida Ornithology," by A. H. Howell; "Recent Spread of the Starling in North America," by Miss May T. Cooke; "Some Causes of Mortality in Birds" and "What Constitutes a Record?" by F. C. Lincoln; "Progress of the Waterfowl Census," by Dr. H. C. Oberholser; and "Feathered Fishers of Southland Swamps," by H. L. Stoddard. Other members of the Bureau present at the meeting were Dr. W. B. Bell, Dr. T. S. Palmer, W. L. McAtee, Vernon Bailey, Edward A. Preble, Charles H. M. Barrett, Mrs. Jane S. Elliott, and Charles O. Handley. At the business session on November 19, Dr. Alexander Wetmore, assistant secretary of the Smithsonian Institution, Dr. T. S. Palmer, and W. L. McAtee were re-elected president, secretary, and treasurer, respectively. Interesting features of the meeting included a motor trip for visiting members to the collecting grounds of Catesby, Audubon, and Garden, near Charleston; a memorial service in honor of John Bachman at the St. Johns Lutheran Church, where he was once pastor and where under the chancel he is buried; and an all-day field trip by boat to Dewees Island, northeast of Charleston Harbor.

Chief Sends Greetings to Ornithologists.--In his message read by Mr. Henderson to the members of the American Ornithologists' Union in session at Charleston, S. C., Mr. Redington expressed the appreciation of the Survey for the continued cooperation of the Union and its help in the prosecution of the Bureau's endeavors. "The proper protection of the migratory-bird life of the United States and its territories," he said, "is something for which the Biological Survey is directly responsible, not only to the Secretary of Agriculture, but to organizations such as yours, which has for so many years taken a deep and abiding interest not alone in the welfare of the birds which migrate but also those which are more or less resident in a given region throughout the year." He went on to stress the great need and importance of a series of refuges for migratory wild fowl and outlined what had been accomplished by way of establishing refuges during the past year; mentioned the progress made in the bird-banding and waterfowl-census operations of the Bureau and the additional protection given the woodcock and the need for a more thorough study of its status; and emphasized the importance of controlling the predatory enemies of birds, particularly the coyote and the house cat. "The protection of the bird life of the Nation is not a job for any one organization," said Mr. Redington in concluding his message. "It is my desire as Chief of the Biological Survey at all times to seek counsel with the organized bird-life interests, to tell them frankly of the difficulties which confront us, to make clear to them situations in which we believe helpful action is needed, and to work side by

side in an educational program which may have as its objective the assurance that the public agencies' attitude to the demands of bird students and lovers may be a satisfactory one so far as proper steps for the protection of the country's bird life are concerned."

Field Men Transferred to Food Habits Research.---With the object of effecting a better alignment of the field research work of the Bureau, Dr. Walter P. Taylor, stationed at Tucson, Ariz., Theo.H. Scheffer, at Puyallup, Wash., and Stanley E. Piper, now at San Diego, Calif., but later to be detailed to the East, have been transferred from the Division of Biological Investigations to the Division of Food Habits Research. The work of these men deals primarily with the food habits of mammals injurious to agriculture, horticulture, and forestry, and their allocation to the division to which such studies are assigned is logical. Further than the divisional reallocation of these men, there has been no change in their programs of work or methods of conducting them during the present fiscal year.

Hunting Predators from Airplanes.---In last month's issue of THE SURVEY mention was made of a report received by one of the field leaders on hunting coyotes by use of an airplane. The proposal is frequently made by cooperators that this method be employed, and frequently local newspapers offer not only to give the matter wide publicity but to meet part or all of the cost. The attitude of the Biological Survey is adverse to this method of hunting. It is all the more to be discouraged in view of the fact that game protectors of the Survey have had to make several arrests for illegal hunting from airplanes, a violation of the migratory-bird treaty act. However exciting and spectacular this method of hunting predators may be as a stunt, it is not felt that it offers an effective method of predatory-animal control or that it results in publicity that is to be desired. Publicity has arisen because of the great kill of predators that is considered to be possible through this method of hunting, but the danger to man and other animals should be considered when operations against coyotes are to be conducted on rough areas.

Film on Alaska Wild Life Shown.---Members of the Survey, on November 23, had opportunity at the Department's Motion Picture Laboratory to see several reels of the motion pictures taken on Mr. Redington's trip last summer through Alaska. The film, shown through the courtesy of Harry Whitney, noted sportsman and big-game hunter, of Kennett Square, Pa., who was also a member of the party making the trip, depicted the wild life of Alaska, including bird rookeries, sea-lion colonies, and Kodiak bears, as well as many interesting features connected with the reindeer, fur-farming, whaling, fishing, and mining industries of the Territory. Mr. Whitney was present at the exhibition and both he and Mr. Redington explained facts connected with the pictures.

Radio Talks for December.---Biological Survey talks for the month of December in the Department's radio program are scheduled as follows:

Domestic Rabbits for Food and Fur.	December 13
Beaver Habits and Culture	December 18
Fox Farming	December 25
Rabbit Raising.	December 27
Canaries and Other Bird Pets.	December 30

In the Departments' noonday network broadcast on December 3, James Silver is scheduled to talk on Rat Control.

Official Publications.--- The following publications were issued during the month:

- Birds of New Mexico. By Florence Merriam Bailey, with contributions by the late Wells Woodbridge Cooke. Published by the New Mexico Department of Game and Fish, in cooperation with the State Game Protective Association and the Bureau of Biological Survey. 807 p., illus. November 15, 1928.
- The Mouse Infestation of Buena Vista Lake Basin, Kern County, California, September, 1926, to February, 1927. By Stanley E. Piper. A report on the Bureau's investigations, published in the Monthly Bulletin of the Department of Agriculture of California, vol. 17, no. 10, p. 538-560, illus. October, 1928.
- Organizing an Anti-Rat Campaign. Leaflet Bi-703 (revised). By James Silver. 8 p. Received November 6.

Outside Publications.---The following articles by members of the Bureau appearing in outside publications have been reported during the month:

- Bailey, Vernon. The Desert Tortoise. Nature Magazine, vol. 12, no. 6, p. 372-374, illus. December, 1928.
- Denmead, Talbott. When the Wind Doth Blow. Maryland Conservationist, vol. 5, no. 4, p. 14, illus. Fall Issue, 1928.
- Earnshaw, Frank L. Department of Game and Fish Laws--Bringing Home Your Game from Other States. Field and Stream, vol. 33, no. 8, p. 62-63. December, 1928.
- Gabrielson, Ira N. Forest Planters. Four L Lumber News, vol. 10, no. 31, p. 9, 33, illus. November, 1928.
- Goldman, E. A. A New Kangaroo Rat from Sonora. Proceedings Biological Society of Washington, vol. 41, p. 141-142. October 15, 1928.
- Hanson, Karl B. Lungworm Trouble in Foxes, Its Treatment and Control. Black Fox Magazine, vol. 12, no. 10, p. 3, 4, and 74. November, 1928. Published also in Fox Breeders Gazette, vol. 5, no. 2, p. 21-23. November, 1928.
- Jackson, Hartley H. T. Review of Eifrig's "Our Great Outdoors: Mammals." Journal of Mammalogy, vol. 9, no. 4, p. 339. November 13, 1928.
- Scheffer, Theo. H. Dealing with the Seals and Sea-Lions of the Northwest. The Murrelet, vol. 9, no. 3, p. 57-59. September, 1928.
- Taylor, Walter P. Is It Fad or Big Business? Arizona Wild Life, vol. 1, no. 1, p. 5-6. October, 1928.

Buena Vista Mouse Infestation Report Published.---A comprehensive report under the title "The Mouse Infestation of Buena Vista Lake Basin, Kern County, California, September, 1926, to February, 1927," prepared by Stanley E. Piper, formerly of the Divisions of Economic and Biological Investigations, and recently transferred to the Division of Food Habits Research, is just off the press, published in the October issue of the Monthly Bulletin of the Department of Agriculture of the State of California. The investigations reported upon were carried on in conjunction with the State Department of Agriculture, and acknowledgment is made by Mr. Piper of assistance of the following members of the Survey, for data and photographs: F. E. Garlough, of the Eradication Methods Laboratory; Dr. Walter P. Taylor, then of the Division of Biological Investigations; and Joseph Keyes, leader of rodent-control operations in California.

The results given by Mr. Piper are based on extended field studies that were made of conditions existing in connection with this outbreak and afford a basis for the appraisal of factors responsible for the remarkable increase of mice, their migration, and the attended depredations. The measures or natural agencies that finally served to reduce their numbers and alleviate the conditions are discussed. Such outbreaks of mice occur from time to time in various localities, resulting in disturbed conditions and serious agricul-

tural losses, and involve many puzzling features. Ordinarily little thought is given to the economic importance of house and field mice, but such outbreaks call attention to the great potentialities for harm that obscure and little-noticed animals may have when conditions are favorable for their multiplication to great numbers.

Taylor on Staff of New Conservation Magazine.--A copy of the first issue of Arizona Wild Life, a quarterly magazine published by the Arizona Game Protective Association, is just received in the Bureau. Its editorial staff includes Dr. Walter P. Taylor, of the Division of Food Habits Research. This first number contains a number of articles on the wild life and scenic wonders of the State and excerpts from the annual report of the State game warden.

BIOLOGICAL INVESTIGATIONS

Returns from Northern Trip.--Dr. H. C. Oberholser returned on October 27 from a field trip of several weeks in the interests of the waterfowl censuses. From August 13 to September 15 he was in Quebec mainly in the vicinity of the mouth of Matemek River, on the north shore of the Gulf of St. Lawrence. His subsequent itinerary included points in Newfoundland, the Gaspé Peninsula, Quebec, Prince Edward Island, Nova Scotia, New Brunswick, Maine, New Hampshire, Massachusetts, Rhode Island, and Connecticut. During his trip Doctor Oberholser visited the capitals of all these Provinces and States and obtained cooperation from all game authorities interviewed.

Aids in Starting Park Museum.--Vernon Bailey on November 9 returned from a week's visit to Oglebay Park, near Wheeling, W. Va., where he helped to get started a local museum and to build up a series of study specimens of mammals, birds, and reptiles found in the vicinity. Such specimens will be useful in the extensive program of nature study and outdoor recreation being inaugurated in the park and already attracting visitors from adjoining States. Areas were also selected on the 700-acre farm set aside as a park for inclosing some of the native species no longer found there, such as deer, elk, buffalo, beavers, and some of the smaller animals. The park commission is looking toward an ideal educational center to include the best of outdoor study, conservation, and recreation along lines that are national rather than local.

"Birds of New Mexico" Published.--On November 15 there was issued a volume based in part on investigations that had their inception during the early years of the Biological Survey. This is a report on the Birds of New Mexico, a book of more than 800 pages, in which are brought together in attractive form the principal facts that have become known on this group of wild creatures.

The book appears under the authorship of Mrs. Florence Merriam Bailey, sister of Dr. C. Hart Merriam, first chief of the Biological Survey, and wife of Vernon Bailey, field naturalist of the Division of Biological Investigations, who did the first field work in the State in 1889. Later these efforts were supplemented by extensive explorations by both Mr. and Mrs. Bailey and by many other workers. The data of others, published and unpublished, have also been freely drawn upon, the earliest being from the Spanish adventurer Coronado, who in 1540 found in the wild turkey of New Mexico a welcome addition to his meager larder. The late Wells W. Cooke, an assistant biologist of the Survey, who died in 1916, had made a beginning on the work of collecting the mass of

information that is detailed in this book, and his labors are recognized on the title-page and in special sections. The book is prefaced with a historical statement by Mr. Redington of the part the Biological Survey has had in the work from the time of its inception.

The book is profusely illustrated with 25 new color plates, numerous cuts in black and white from photographs and drawings, including 60 maps of distribution of species prepared in the Bureau. The color plates consist of a map of the life zones of the State, also prepared in the Biological Survey, one hitherto unpublished color plate by the late Louis Agassiz Fuertes, and 23 plates illustrating numerous species of the birds of New Mexico from drawings specially made for this work by the bird artist, Allan Brooks. Publication was under the auspices of the New Mexico Department of Game and Fish, in cooperation with the State Game Protection Association and the Biological Survey, with "the generous cooperation of other interested organizations and individuals of New Mexico."

Monthly Waterfowl Count on Potomac Made.---Dr. H. C. Oberholser on November 10 made the monthly observations of the numbers of waterfowl on the Potomac between Washington and Widewater, Va. About 147,000 individuals of 15 species were observed, including approximately 83,000 lesser scaups, 25,000 canvasbacks, 23,000 black ducks, 2,300 mallards, 1,000 each of gadwalls and redheads, and small numbers of baldpates, pintails, ring-necked, greater scaup, and ruddy ducks, and buffleheads, in addition to about 30 Canada geese and 10,000 coots.

Wanted, A Vocalist!---An appreciative request has been received as a result of the talk on Tularemia, by Dr. W. B. Bell, broadcast over the noon-day network on November 15. A mid-west housewife wrote at once that the talk "sure was good. Will you please sing for me--Just Someone?" It was left to be inferred whether this was the name of the song desired or a tribute to the persuasive powers of the artist.

FOOD HABITS RESEARCH

Completes Preliminary Plans for Mid-West Quail Study.---H. L. Stoddard returned to Washington on October 29 after a successful trip through mid-Western States in company with Aldo Leopold, in the course of which progress was made in planning a proposed study of quail in that area to be similar in scope to the Georgia investigation. On his return to Georgia he stopped at the Virginia State Game Farm for a few days.

Inspects Quail Property at Charleston.---On November 17 and 18, Mr. Stoddard inspected quail property near Charleston, S. C., at the request of Senator-elect F. C. Walcott, of Connecticut, who is interested in developing this area as a shooting ground.

Research Proves Usefulness of Hawks and Owls.---In the spring of 1927, the Game Commission of Yakima County, Wash., established a bounty on various creatures supposed to be destructive to useful birds, especially upland game birds. Arrangements were made for the preservation of the stomachs of the hawks and owls killed and presented for bounty, and 121 of these, 5 kinds of hawks and 2 of owls, were forwarded to Washington, D. C., for study. Of 45 stomachs of Swainson hawks, 40 containing food held about 90 per cent ground squirrels, the remainder consisting of snakes and grasshoppers and other

insects. Of 31 of red-tailed hawks, 27 held food, of which 83 per cent was ground squirrels, 6 per cent rabbits, 4 per cent meadow mice, and the remainder snakes. So the account goes all the way through; these hawks and owls, for the killing of which a bounty was paid, had all been preying chiefly upon ground squirrels, rabbits, and mice, species so destructive in the Western States that the Federal Government and the States have been cooperating for years in campaigns to control them. No game birds whatever had been eaten by any of the 121 hawks and owls killed, and only 3 birds of any kind. It is gratifying to be able to record that as a result of the findings of the Biological Survey, bounties on hawks and owls are no longer paid in Yakima County.

FUR RESOURCES

Visit Virginia Fur Farm.---Mr. Ashbrook and Dr. J. E. Shillinger visited Wytheville, Va., during the latter part of October to inspect a fur farm where minks, martens, fishers, foxes, opossums, raccoons, and skunks are being raised.

Conference on Infectious Diseases of Fur Animals.---Dr. R. G. Green, of the Medical School of the University of Minnesota, spent November 2 and 3 in Washington conferring with Mr. Ashbrook and Doctor Shillinger on the cooperative project on fur-animal diseases. Doctor Green reported that on one large fox ranch, where suitable conditions prevail for observing the course of disease as well as for studying results of vaccinations, the total loss from epizootic fox encephalitis was approximately 10 per cent this year as compared with 20 per cent last year. During his stay in Washington a film on the methods of study of diseases of fur animals was shown at the Motion Picture Laboratory of the Department. Dr. George W. McCoy, director of the Hygienic Laboratory of the U. S. Public Health Service, and several of his assistants were present.

Aids in Outbreak on Fox Ranch.---Dr. Earle Dewey, who is working on the cooperative project of fur-animal diseases at the University of Minnesota, was called to a fox ranch at Chariton, Iowa, on November 6, to aid in controlling an infestation of lungworms among foxes.

Attend Annual Fox Show.---Dr. and Mrs. Karl B. Hanson were in Washington from November 15 to 20. Doctor Hanson was reviewing and planning the work at the Fur-Animal Experiment Station at Saratoga Springs, N. Y. He and Doctor Shillinger left by automobile, on November 20, for Cleveland, Ohio, to attend the Fifth Annual Live Fox and Pelt Exhibit of the American National Fox Breeders Association, which was held from November 25 to December 1. They made a veterinary examination of all the foxes as they were taken from the shipping crates to make sure that they were in perfect health before competition in the show. En route to Cleveland, Ohio, they stopped at a fur farm near Jeromesville, Ohio, to investigate an epizootic among skunks.

Rabbit Exhibit at Fontana.---John W. Meyer, acting director of the U. S. Rabbit Experiment Station, conducted an exhibit at the Garden Valley Fur and

Feather Exposition held at Fontana, Calif., November 22 to 25, to illustrate the experimental rabbit work that is being done at the station.

Paper Read at Rabbit Breeders' Convention.--A paper prepared by Mr. Ashbrook, entitled "How the Government Helps the Rabbit Breeder," was read at the annual convention of the American Rabbit and Cavy Breeders Association, held in Toledo, Ohio, from November 15 to 18.

Division of Fur Farming Established in Russia.--A letter recently received from Leningrad, U. S. S. R., states that a Division of Hunting Industry and Fur Farming has been established in connection with the Leningrad Agricultural Museum. This division will handle problems relating to the economic importance and distribution of the game species and the supply, protection, and propagation of fur animals. It was also stated that experiments with sables in captivity suggest that the mating period takes place in July, which conforms with the Bureau's findings in breeding martens at the U. S. Fur-Animal Experiment Station, at Saratoga Springs, N. Y.

Vacations.--Mr. Ashbrook visited his mother in York, Pa., on November 10 and 11. Miss Jozy Dell Hall returned to duty on November 12 after a week's vacation.

ECONOMIC INVESTIGATIONS

Study Rodent-Control Work in South.--W. E. Crouch, accompanied by James Silver, leader of rodent control in the Eastern United States, has returned from a trip to some of the southern States, including North Carolina and Mississippi, where they gathered first-hand information concerning rodent-control work in that part of the country, particularly regarding operations against pine mice and rats.

Oregon County Votes Tax for Pest Control.--Newspaper reports of November 8 are to the effect that Morrow County, Oreg., in the election of November 6, upheld a local-initiative petition that provides for a tax of 0.5 of a mill on all taxable property in the county for the purpose of controlling predatory animals and rodents.

SURVEY'S Report of Record Catch 20 Animals Shy.--The statement on page 7 of the September SURVEY regarding the predatory-animal record of Hunter Bill Snyder of the Oregon district should have read that a number of years ago he took 150 coyotes and bobcats in August and 150 in September, or a total of 300 for a 61-day period, instead of 150 and 130, respectively.

Railroad Interested in Pocket Gophers.--A. M. Day, leader of predatory-animal and rodent control in the Wyoming district, reports that the Burlington Railroad system is much interested in the control of pocket gophers. These rodents infest the right of ways, burrowing through and greatly endangering the grades. Heavy rains or breaks in irrigation ditches are apt to cause thousands of dollars damage to a railway grade where it is honeycombed with runways. The roadmaster at Bridgeport, Nebr., conferred with Mr. Day at Guernsey on October 26 and learned something of the habits of the pocket gopher

and how to control it. He is now placing pocket-gopher traps in the hands of all his section foremen, thus making pocket-gopher control one of their duties as they inspect the road.

Rodent Damage Checked in National Forest Area.--L. K. Couch, leader of rodent control in the Washington district, reports that investigations were made recently of rodent damage to transplanted areas in the Snow Creek section of the Olympic National Forest, where 23,000 acres are being rapidly planted with Douglas fir. Considerable cutting and trimming have been done to one- and two-year-old plantings by native jack rabbits, meadow mice, and mountain beavers, with mice the chief offenders. Preliminary poisoning will be attempted in the spring, along with more detailed investigations.

Police Dog Proves Bad Stock Killer.--Louis Knowles, leader of predatory-animal and rodent control in the South Dakota district, reports that during October Hunter Arvel Pitts took a police dog that had been a notorious killer northwest of Sturgis, S. Dak. This animal had heard the call of the wild and for three years had been running with coyotes of the region. During this time it had destroyed several hundred dollars worth of turkeys, chickens, pigs, and lambs. Examination of the dog's stomach showed that it had made its last meal on turkey. A stockgrower living northwest of Sturgis stated that because of losses occasioned by coyotes and dogs he had advertised his sheep for sale just before Hunter Pitts was assigned to that locality, but has now decided to continue in the sheep business.

Mr. Knowles also advises that Hunter John N. Martin took three old male coyotes in the State Game Park that were companions of a wild police dog with which they had been ranging and preying on deer, and that Hunter Harry Henderson shot a coyote that had killed a \$30 ram at a ranch in Harding County, S. Dak. Mr. Henderson also trapped a 45-pound bobcat in October.

Rats Cleared from Railway Stockyard.--During the latter part of October Wallace W. Smith, assistant leader of rodent-control work in South Dakota, was in Aberdeen engaged in rat-control operations. On October 29, assisted by a stockyard foreman he baited the stockyards of one railway company, using about 50 pounds of squill-oatmeal bait. A check of the work on October 31 showed that the bait had produced good results, and many dead rats were found scattered over the yards. At one place under some boxes seven dead young rats and their mother were found in one pile, the male having been killed on the day of the baiting. A night workman said that he was accustomed to seeing hundreds of rats at a time but that since the baiting he had seen very few. The stockyard foreman seemed well pleased and reported to the division superintendent of the railroad that he had no use for the 500 dead rats lying about the place. The city of Aberdeen cooperated in mixing the bait for the campaign by detailing men from the Aberdeen jails to the work.

Successful Wolf Hunt in Utah.--G. E. Holman, leader of predatory-animal control in the Utah district, sent in under date of October 26 the following interesting report of a wolf hunt: "For the past three or four years we have been receiving reports from stockmen of a lone wolf ranging on what is known as the Fifty-Mile Mountain, about 50 miles southeast of Escalante, Utah. A short time ago I instructed Hunters S. M. Willis, of Henrieville, and Leslie Davis, of Escalante, to go into this country and stay there until they got the wolf. I sent two men together because of the extreme isolation of the territory and the fact that there is no one who lives closer than Escalante. Few persons go into that country except the occasional cow punchers who look after their stock. To-day I received a letter from Mr. Willis dated October 16,

informing me that they were successful in landing this wolf in short order. He states that they arrived on Fifty-Mile Mountain on the night of October 12 and on the following morning found where the wolf had followed their trail for a short distance. They proceeded to set their traps, and riding over their line on the morning of the 5th found that the wolf had come back over the trail and had stepped into the first setting of traps he came to. The animal got away, however, with just the trap (a No. 14) on its foot, after breaking the chain and getting caught in some brush and rocks. Mr. Willis had with him his five fox-hound dogs, which he put on the trail. They followed the wolf between 15 and 20 miles through an extremely rough country and finally cornered it in a deep box canyon and held it until the hunters got close enough to shoot it. Mr. Willis reports that the five dogs were unable to handle the wolf or do anything but hold it cornered in the rocks. One of the dogs got so badly chewed up that it will be several weeks before it can work again. During the time they were riding in that country, before and for several days after the wolf was caught, they found 15 or 20 head of cattle daily that it had killed. Cattlemen estimate that it has killed an animal every two or three days for nearly four years."

Control Program Gratifying.--Under the title "Rodent and Predatory-Animal Control Progress Gratifying," the California Department of Agriculture, in its monthly Bulletin for October, 1928 (page 573), has the following to say:

"Stanley P. Young, in charge of economic investigations of the U. S. Bureau of Biological Survey, visited Sacramento in the past month and conferred with the Director of Agriculture relative to the advancement, effectiveness, and organization of predatory-animal control work in this State. Arrangements were perfected for a better correlation of the activities of the Federal, State, and county agencies in these activities. Mr. Young plans to make a survey of conditions in California in order to develop a comprehensive control program, particularly taking into consideration the activities of all agencies interested in the control of ground squirrels. Observations up to the present time have disclosed that very effective control has been accomplished due to the intensive operations of certain county horticultural commissioners in cooperation with the State and Federal departments, but it is believed that a better correlation of activities between these agencies will improve uniformity of the program throughout the State. The economic losses occasioned from rodents have been materially reduced over the period of the last ten years and continuation of the efforts, on the basis of a consistent program will still further aid the agriculture of California."

Control Work Proving Popular on Lemhi Forest.--"During October," according to Luther J. Goldman, leader of predatory-animal control in the Idaho district, "Oscar Mink, forest supervisor of the Lemhi Forest, promoted a predatory-animal poisoning demonstration in which the Forest Service, the Biological Survey, and the Predatory-Animal Committee of the Lemhi and Challis Forest Project participated. Oscar engineered proceedings, Ranger George Miller conducted the bait-horse victim to the top of a convenient ridge, and Goldman, Twitchell, and Evans carved the animal in a manner calculated to discourage the idea of its ever gathering itself together again. We had planned to divide this work among the assembled committee of stockmen, but as they turned out in white shirts we were obliged to let them off. Predatory-animal work has taken such a noticeable rise in popularity on the Lemhi Forest that the whole Idaho division of the Biological Survey may want to be transferred to the Lemhi."

November, 1928

Texas Hunter Makes Record Catch.--Hunter Ralph Wimberley during October made a catch of 71 predatory animals (17 bobcats and 54 coyotes) on a ranch in Maverick County, Tex., according to a report from C. R. Landon, leader of predatory-animal control in the Texas district. This was the largest catch both for the month and the year in that district. Five years ago a stockman took his sheep to this ranch, which was then a cattle ranch and is still surrounded by other cattle ranches. Ever since, in cooperation with the Federal Government, he has prosecuted a vigorous campaign against the bobcats and coyotes infesting this range, and an annual average of 500 predators have been destroyed there. Yet he reports losing between 600 and 800 sheep during the past year from the depredations of stock-killers. Had there been no drift of coyotes from surrounding ranches, where no efforts are made to control them, this rancher could have destroyed all the coyotes on the ranch within two or three years. This illustrates the fact that permanent protection from predatory animals can not be obtained unless the efforts of all the people in the community are enlisted in the control campaigns.

GAME AND BIRD CONSERVATION

On Trip to Mississippi Valley.--Mr. Sheldon left Washington November 9 for Memphis, Tenn., and other points on the Mississippi River on business relative to the Migratory Bird Treaty Act. While on the trip he will discuss conditions with State Game Commissioners and other State and Federal officials administering game laws and game and bird reservations. He will return to headquarters about December 1.

Returns from Dorchester County, Md.--Talbot Denmead returned November 21 from a 10-day trip into Dorchester County Md. He visited the Hoopers Island section and saw large numbers of ducks and geese, including brant and a female eider duck at Honga, Md., which had been killed on November 9 in Honga Bay for a scoter. Woodcock, he reports, appear to be more plentiful in Dorchester County than last season, but quail are scarcer, probably on account of the severe rains of the summer. He also reports that rabbits seemed to be more plentiful, indicating the possibility that tularemia has now run its course in that section. He also visited the Woodmont Rod and Gun Club in Washington County, Md., where he was fortunate enough to secure two wild turkeys. He inspected the club's wild-turkey breeding pens and looked over the 1,500 wild birds being raised there.

Wild Fowl Abundant in Southeastern Texas.--Game Protector Frank Clarkson advises that without a doubt there are more ducks and geese at present in his district, southeastern Texas, than at any time since August, 1926, when he became associated with the Survey, and that old residents of the region say that there are more than for the past five years. He estimated that there were nearly a hundred thousand ducks in a ricefield near Matagorda, Tex., on October 22, and states that they covered many acres, their feeding noise sounding like a waterfall. For two hours the next day the ducks came out of the ricefields in a continuous cloud, and according to Mr. Clarkson's estimate there were more than on the day before.

Visitors Increase at Wind Cave Preserve.--During the past summer, 27,049 visitors registered at Wind Cave National Park, S. Dak., within which the Wind Cave Game Preserve is located. This is a 25 per cent increase in numbers of visitors over 1927. It is estimated that there were three times as many visitors who did not register, which would make a total of more than 100,000 persons who passed along the fence of Wild Cave Preserve during the 1928 season.

Fire in Vicinity of Sullys Hill.--On the evening of October 17, a prairie fire was discovered two miles east of Sullys Hill Game Preserve, N. Dak. About 100 men helped to fight it, including Protector Wesley D. Parker and four of his assistants. By much back firing, assisted by a light rain, the fire was extinguished that night. Approximately seven sections of land were burned over, and some hay and straw stacks, as well as the prairie grass, were destroyed.

Buffalo Shipped from Bison Range.--Three buffalo have been shipped from the National Bison Range, Mont., to the city park at South Bend, Ind., and one to Jackson, Miss., for the Arkansas Game Commission.

Elk Refuge Notes.--Employees at the Elk Refuge, Wyo., have threshed 1,746 bushels of oats from 26 acres for use as seed and as feed for work horses there. This is reported to be of excellent quality and sufficient to last for two years. On October 31, the greater portion of the elk herd was said to be far back in the mountains. State Game and Fish Commissioner Bruce Nowlin and family visited the refuge on October 21.

Birds Plentiful at Dungeness Spit.--Geese and swans are reported more plentiful at Dungeness Spit Bird Refuge, Wash., than for several years, and in good condition.

Large Flight of Cranes at Belle Fourche.--The largest flight of sandhill cranes observed in several years occurred at Belle Fourche Bird Refuge, S. Dak., and vicinity early in October.

Many Species Found to Swim Mississippi.--Supt. W. T. Cox, of the Upper Mississippi Refuge, reports that rangers patrolling the refuge find that many animals swim the Mississippi River from bank to bank, undoubtedly doing it of their own free will. Gray squirrels, fox squirrels, and red or pine squirrels are among the animals most frequently found boldly essaying to cross from the Wisconsin or Illinois bank to the distant Minnesota or Iowa shore. Hundreds of the squirrels are seen struggling through the swift, muddy current. For the first few hundred yards after taking to the water these animals keep their bushy tails sticking straight up as if to keep them dry or in order that they may serve as sails! Later, as the animals become wearied, their tails dragging in the water make progress slow and steering difficult. An interesting feature of the squirrel migration is that the animals in nearly every case seem to have a destination in view. When allowed to crawl up an oar into a boat, as they are perfectly willing to do, they will ride along if the boat is going in the direction to suit them, but if not they will soon jump out and resume swimming. Woodchucks, raccoons, skunks, and other animals not ordinarily seen in the water occasionally strike out boldly and swim the Mississippi. Of course, during times of real high water the islands become flooded and force even the rabbits, chipmunks, and mice to move. At such times there is heavy loss of life among these creatures both from drowning and from concentrated attacks of their enemies.

Upper Mississippi Notes.--From the number of wood ducks now in evidence at various points on the refuge, it would appear that the species has suffered no serious setback during the past year.

Several refuge officers have been busy recently trapping beavers in

northern Minnesota in cooperation with the State Department of Conservation. The animals are being shipped to Winona, and from there they are sent out to stock portions of the refuge.

The Upper Mississippi Refuge is proving to be a great benefit to many forms of wild life. Among the creatures quick to realize the protection afforded by the refuge are the migratory birds. Ducks, geese, and coots have sought out the protected areas, and last fall remained until the freeze-up. As a result of the security enjoyed by the birds on the protected portions of the refuge, many remained to nest during the summer that normally would have gone farther northwest or might have been killed. Local birds are fairly plentiful this fall, but the high water enables them to get into large inaccessible districts, making hunting rather difficult. Many local ducks should survive to go south this fall. The northern ducks as they arrive find this year several closed areas or sanctuaries in addition to the ones they found last fall and seemed so greatly to appreciate. The fact that closed areas, while small in themselves, are fairly well distributed through the bottoms this year, combined with the existence of high water, should guarantee satisfactory hunting throughout the fall and still leave many birds to go on to their winter quarters in the South.

In addition to the sanctuaries and the rather intensive patrol and protection through enforcement of the State laws and Federal regulations along the river, the Survey is doing another thing to build up the wild fowl on the Mississippi. Wild ducks and geese have been trapped and placed on Lake Winona, where in cooperation with the City of Winona, the Government is building up a large flock of wild fowl. The ducks released are banded with a view to obtaining information regarding their routes of flight. Recently a mallard duck was shot near Wabasha, Minn., that carried a band showing that it had been banded on November 5, 1927, at Rochester, N. Y.

Importations.--Importations of foreign birds during the month were unusually heavy, approximately 90,000 being brought in at the port of New York alone during this period. Among the rarer birds imported were 14 Old-World flamingoes.

Shipments of foxes from Canada have been arriving in fairly large numbers recently, and a mink valued at \$400 was entered at Richford, Vt., on November 2.

Protector's Father Injured.--Information is received that the father of Game Protector Harry Barmeier was badly injured recently by an automobile in Quincy, Ill., where he resides. The Survey extends best wishes for a speedy and complete recovery.

Sympathy is extended to Game Protector W. H. Hoffman and family in the death of Mr. Hoffman's father, which occurred at his home in Summerdale, Ala., on November 5.

Vacation.--Protector H. Harrison Hoyt, of Wind Cave Game Preserve, S. Dak., spent his vacation in the Rocky Mountain National Park and various other points in Colorado. His return trip was made via Niobrara Reservation, Nebr.

Appointments and Transfers.--Miss Johanna H. Corsack, of Pittston, Pa., was appointed junior typist in the Washington office on October 22.

Benjamin Catchings has been appointed assistant attorney in the Winona office and Julius G. H. Frerichs deputy reservation ranger and U. S. Deputy

game warden at the Upper Mississippi River Refuge.

Leland S. French, abstractor in the Winona office, has been transferred to the Forest Service.

Convalescent.--A. P. Chambers, protector of Wind Cave Game Preserve, S. Dak., has returned much improved in health to his home at Hot Springs, S. Dak., from the U. S. Marine Hospital, Chicago, Ill., where he has been since last June. He has the best wishes of the Survey personnel for his complete recovery.

Treaty-Act Cases Terminated--Reports Received During October

<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Barmeier, Creech*	1	Missouri	Hunting and killing coots from a motor boat	\$100
Clarkson, Adams*, Mrovka*	1	"	Killing ducks in close season	\$50
Holland*	1	Louisiana	Killing a heron	\$15 and costs
Holland*, Calibrac**	1	"	Killing a heron	\$5 and costs
Holland*, Foolkes*	1	"	Possessing mourning doves in close season	\$100 and costs
" "	1	"	Possessing a coot	Six months suspended jail sentence
Holland*, Pertuit**	1	"	Possessing mourning doves in close season	\$100 and costs
Holland*, Pertuit**, Schreiber**	1	"	Possessing wild ducks	\$100 and costs
" "	1	"	Selling portions of wild ducks	\$50 and costs and 30 days in jail
Holland*, Pertuit**, Wendell*	1	"	Purchasing and possessing wild ducks in close season	\$25 and costs and 30 days in jail
Holland*, Thompson**	1	"	Killing and possessing mourning doves in close season	\$100 and costs
Holmes, Taylor**	2	Missouri	Hunting snipe in close season	\$50 each
Oberhaus*	2	Alabama	Killing and possessing mourning doves in close season	\$10 each and costs
Perry, Tomilson**	3	Mississippi	Killing doves in close season and in excess of bag limit	\$50 each and costs of \$20 each
Shaver	1	Minnesota	Killing wild ducks after sunset	\$10
Shaver, Beals*, Hope**	4	Wisconsin	Hunting ducks after sunset	\$25 each
Shaver, Rogalla***	1	Minnesota	Selling wild ducks and coots	\$100
Steele, Jones*	1	Washington	Offering for sale and selling wild ducks and geese	\$20
Whitehead	4	Georgia	Killing nighthawks	\$15 each

*U. S. Deputy Game Warden.

**Deputy State Game Warden.

***Cooperator.

Cases Reported for Prosecution

<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Barmeier, Creech*	2	Missouri	Killing coots from a motor boat
Charlton, Miles*	1	West Virginia	Mounting migratory birds without a Federal taxidermist permit
Holland*, Foolkes*	1	Louisiana	Possessing mourning doves in close season
" " "	1	"	Possessing a coot in close season
Holland*, Pertuit**	1	"	Possessing mourning doves in close season
Holland*, Pertuit**, Earhart**, St. Germain**	2	"	Hunting wild ducks in close season
" " "	1	"	Killing a rail in close season
" " "	1	"	Possessing a rail in close season
" " "	1	"	Killing a wild duck and a coot in close season
Schreiber**			season
Holland*, Pertuit** ^	2	"	Possessing wild ducks in close season
" " "	1	"	Selling wild ducks
Holland*, Texada**, Brouillette**	1	"	Killing mourning doves in close season
Holland*, Texada**, Burns**, Gremillion**, Brouillette**	1	"	Possessing a wood duck
Jans*	1	Illinois	Possessing killdeer
"	1	"	Possessing a grebe
"	1	"	Possessing a catbird
"	1	"	Possessing a robin
Oberhaus*	2	Alabama	Killing and possessing mourning doves in close season
Roahen	1	Illinois	Possessing a wood duck
Riddick	1	Arkansas	Killing wood ducks
Scholler*, Petersen*	1	Illinois	Possessing a wood duck
" " "	1	"	Shooting coots from a motor boat
" " "	2	"	Killing coots from a motor boat
Steele, Jones*	1	Washington	Offering for sale and selling wild ducks and geese
Steele, Mill*	1	Kansas	Hunting plover; possessing yellowlegs

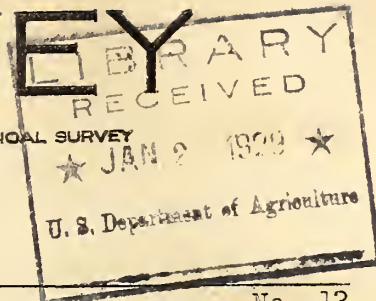
* U. S. Deputy Game Warden.

** Deputy State Game Warden.

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THE SURVEY

ISSUED MONTHLY FOR THE PERSONNEL OF THE BUREAU OF BIOLOGICAL SURVEY
UNITED STATES DEPARTMENT OF AGRICULTURE



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No. 12

TO MEMBERS OF THE SURVEY:

Another year is passing out of the calendar, and 1929 will soon be ushered in. It will bring new responsibilities and joy to all of us, and to some it may bring sadness and disappointment through personal loss or through inability to do in the manner we should like to those professional and personal tasks that are our common heritage.

Although the public service has its drawbacks, it also has its strong appeal, particularly to those of us who have been connected with it for some time. The public service that we as members of the Biological Survey can render comprehends the doing of many tasks and the meeting with many people, and in this work and in these contacts there is not only much real enjoyment but also much personal self-sacrifice. The work is of large scope and increasing steadily, and the hours are all too few. The faithful attention to duty on the part of the members of the Survey is steadily registering, however, and this is evidenced constantly by the testimony that comes from the people for whom we are working and with whom we are cooperating. I should say that the bouquets exceed the brickbats in number, and while we should not allow this to lull us into a too complacent state, it is nevertheless gratifying.

Public interest in wild-life conservation and protection and in our economic work is steadily increasing. With this increase come new cares, and I feel sure that the members of the Survey will respond wholeheartedly to such additional demands as may be made upon us: We of the Washington office desire nothing more than to be of the best help we can to the army of workers in the field, and we anticipate in return the continuance of their hearty cooperation.

You have my sincere good wishes for a Merry Christmas and my hope that the New Year will be an eventful one for each one of you and filled with happiness and success.

Paul G. Rodington

Office of the Chief
December 19, 1928

GENERAL NOTES

Attend National Game Conference.---The Fifteenth National Game Conference was held under the auspices of the American Game Protective Association at the Hotel Pennsylvania, New York City, on December 3 and 4, 1928, the opening session being devoted to discussions on game breeding. Among the addresses at other sessions were the following by members of the Survey: "Certain Aspects of Wild Life Conservation," Paul G. Redington; "Status of Game in Alaska and Its Needs," H. W. Terhune, executive officer of the Alaska Game Commission; and "Problems I Have Met," David H. Madsen, superintendent of the Bear River Migratory Bird Refuge and president of the International Association of Game, Fish, and Conservation Commissioners. Representatives of the Forest Service also and of important conservation organizations from all parts of the country were present, and their interchange of ideas on conservation gave a viewpoint on wild-life protection that is nation-wide in scope. Several other members of the Survey were present, including, in addition to Mr. Madsen and Mr. Terhune, who had been called to Washington for conference purposes, the following from the field: W. T. Cox, superintendent of the Upper Mississippi Wild Life Refuge, of Winona, Minn., and Game Protector P. S. Farnham, of Owego, N. Y. Mr. Terhune will remain in Washington until early in January.

"Provide More Protectors" is the title of an editorial in the Sunday, December 9, issue of the Washington, D. C., Star, which calls attention in a very convincing fashion to the need of more Federal game protectors if the migratory-bird treaty act is to be adequately enforced. "Herbert Hoover, President-elect," the editorial opens, "has already expressed himself of the opinion that in this country there is too much water between fish. It may be that he is also convinced that there is too much atmosphere between game protectors, those Federal officers employed to enforce the migratory-bird treaty act, a piece of legislation which benefits not only all nature lovers but eventually all disciples of Nimrod.

"It must be a proud and distinguished sort of job, that of game protector, but at the same time somewhat burdensome. There are only 24 of them in all, or an average per State of one-half of one protector. Presidential electors are common in comparison. Two average-sized States form quite a 'beat' for one of these men to cover properly, even with what assistance he can count on from deputy United States game wardens and other limbs of the law. . . There are too many hunters ready to violate the law if given half a chance."

The editorial goes on to point out some of the accomplishments of the Biological Survey during the past year and speaks of the Bureau as "the best friend our furred and feathered friends have," ending with an appeal for more protection to the wild-life resources of Alaska, "which has but seven full-time wardens, each expected to cover the trifling territory of 70,000 square miles. . . The Biological Survey is convinced that in Alaska there exists a real and great opportunity to put into effect a wild-life administration program which may be a world-wide example. May the legislative, the executive, and the judicial branches of our Government all share the same point of view and act accordingly."

Press Clippings in General.--Members of the Survey in Washington are always interested in comments of the press in newspapers and magazines on the work of the Bureau; especially important editorials. Many of the field men have already formed the habit of reading their daily paper with a pair of scissors, as may be judged from the numerous clippings received from them. Others may have forgotten that the Bureau has provided an easy way to handle them--paste them on Form Bi-599, which has a gummed strip for the purpose and provision for the name of the paper, date of issue, etc. Field men may be sure that the clippings sent will be referred to all who may be interested, and if of sufficient import will be filed for future reference. Some of them find their way to the Secretary and all go to the Press Service of the Department. A pad of Bi-599 may be had on request.

Chief Is Member of New Coordinating Board.--Mr. Redington, by action of the Director of the Bureau of the Budget, H. M. Lord, has recently been appointed a member of the Forest Protection Board, an agency established to coordinate the policies and plans for the prevention and suppression of forest fires and for general forest protection formulated by the several Federal bureaus charged with the protection of the forests of the country.

Sympathy is extended to Mrs. Ada B. Morrison, of the Administration Office, in the death of her grandson, Ernest Waud, of Chicago, Ill., which occurred on December 12.

Official Publications.--The following official publications of the Biological Survey were issued during the month:

- "Report of Chief of Bureau of Biological Survey," by Paul G. Redington. 34 p. Issued December 4.
- "A Comparison of Feed Costs with Pelt Values of Silver Foxes," by Frank G. Ashbrook and Dr. Karl B. Hanson. Leaflet Bi-990 (mimeographed). 4 p. Received December 7.
- "The Spread of the European Starling in North America (to 1928)," by May Thatcher Cooke. Circular 40. 10 p., 1 pl. (colored), 1 fig. (map). Received December 11.
- "The European Starling in the United States," by E. R. Kalmbach. Farmers' Bulletin 1571, 27 p., 8 figs. Received December 15.
- "Recommendations to Beginners in Fur Farming," by Frank G. Ashbrook. Leaflet 27, 8 p. Received December 15.

Outside Publications.--Articles by members of the Survey appearing in outside publications have been reported as follows:

- Ashbrook, Frank G., and Karl B. Hanson. A Comparison of Feed Charts with Pelt Values of Silver Foxes. The Black Fox Magazine, vol. 7, no. 11, p. 3-4. December, 1928.
- Gabrielson, Ira N. The Season: Birds of the Oregon Region. Bird-Lore, vol. 30, no. 5, p. 345-346; and vol. 30, no. 6, p. 409-410. September-October, 1928; and November-December, 1928, respectively.
- Jewett, Stanley G. Bird Notes from Oregon. The Condor, vol. 30, no. 6, p. 356-358. November-December, 1928.

- Lincoln, Frederick C. Banded Pintail Recovered in British Honduras. The Condor, vol. 30, no. 6, p. 359. November-December, 1928.
- Mills, Ernest M. The Rat Problem on the Farm. Rural New Yorker, vol. 87, nos. 5027 and 5028, p. 1330 and 1355, illus. October 27 and November 3, 1928.
- Murie, Olaus J. Ee-ah Finds the Refuge. Junior Red Cross News, vol. 10, no. 3, p. 42-45, illus. November, 1928.
- Nelson, E. W. Descriptions of Three New Subspecies of Birds from Mexico and Guatemala. Proceedings Biological Society of Washington, vol. 41, p. 153-156. October 15, 1928.
- Oberholser, Harry C. June and July Birds about Washington, D. C. Bird-Lore vol. 30, no. 5, p. 337. September-October, 1928.
- Palm, Bessie W. Birds That Have Made Lindbergh Flights. Forward, vol. 47, no. 44, p. 346, illus. November 4, 1928.
- Shillinger, J. E. Summary of Experimental Work on Fox Diseases. Fox Breeders Gazette, vol. 5, no. 2, p. 33-34. November, 1928.
- [Carhart, A. H., and] Young, Stanley P. Bigfoot, Terror of the Lane Country. Blue Book Magazine, p. 115-125. January, 1929.

BIOLOGICAL INVESTIGATIONS

Starling Banding-Party.--On the evening of December 10, F. C. Lincoln, E. R. Kalmbach, C. C. Sperry, and F. M. Uhler resumed their study of the local starling roosts and banded about 300 in the church steeple at the corner of John Marshall Place and C Street. The work will be continued here and at a neighboring church throughout the winter. Of the starlings banded under similar conditions last winter in Washington, returns have been reported from six States and the District of Columbia.

Monthly Waterfowl Census on Potomac River.-- Dr. Harry C. Oberholser on December 11 took the monthly waterfowl census on the Potomac River between Washington and Aquia Creek, over a stretch of 45 miles. He found waterfowl more abundant than they have been for several years at any season, as approximately 205,000 individuals of 17 species were observed. The birds were massed chiefly between Hunting Creek and Mount Vernon, and between Craney Island and Quantico, Va. The most abundant species was the canvasback, of which about 155,000 were noted; the lesser scaup of which about 32,000 were seen; and, the only other species in large numbers, the black duck, of which about 15,000 were observed. Other species represented by small numbers were the mallard, gadwall, baldpate, and ruddy duck. A flock of 430 Canada geese was counted near Indian Head. The number of coots had diminished from the previous month to about 800.

Recent Visitors.--Among visitors to the division during late November and early December were the following: A. C. Bent, Taunton, Mass.; W. F. Bond, superintendent of Public Education of Mississippi; H. C. Bryant, of the California Fish and Game Commission; Robert H. Hill, fish and game warden of Montana; Hoyes Lloyd and Harrison F. Lewis, of the Canadian National Parks; Carl Lomen, of New York and Alaska; John C. Phillips, Boston, Mass.; S. F. Rathbun, supervisor of game and game fish of the State of Washington; C. P. Russell, park naturalist, Yosemite National Park; and Ernest Thompson Seton, Greenwich, Conn.

FOOD HABITS RESEARCH

Botanist for Division to be Appointed.--The filling of the position of botanist, vacant for several years, has progressed one step nearer accomplishment. Papers have been received and graded from eight applicants. It is hoped to have the position filled by the first of the year.

Continues Bulb Pest Studies.--During the latter half of November, Theo. H. Scheffer made a trip to points in Oregon and California continuing his investigations of the relation of moles and rodents to the growing of bulbs. He also conferred with E. E. Horn on matters pertaining to the life history of pocket gophers.

Work on Experimental Plots.--Dr. W. P. Taylor's field operations in November included trips to the Santa Rita Reserve and to Roosevelt and Payson, Ariz., where work was done on experimental plots.

Addresses Biological Society.--E. R. Kalmabach, on the evening of December 1, addressed the Biological Society of Washington on "Notes on Washington Starlings," his talk being illustrated with lantern slides.

Champs!--In the golf tournament of the Department of Agriculture in October, L. L. Buchanan won first place and C. C. Sperry second place, both of whom received medals presented by Secretary Jardine. Mr. Buchanan also won first place in the tourney last year.

In a recent interdepartmental chess match, in which the Department of Agriculture took first place, Mr. Kalmbach came out victorious by winning his game.

FUR RESOURCES

Investigate Production of Catnip at Experiment Station.--Stanley P. Young, in charge of Economic Investigations, accompanied Mr. Ashbrook to the Fur-Animal Experiment Station, at Saratoga Springs, N. Y., on December 6 and 7, to consider whether the production of catnip there for use in predatory-animal control should be continued. Mr. Young believes that catnip oil can be produced much more cheaply elsewhere and that it is not advisable to continue raising it there after the 1929 season. This was Mr. Young's first visit to the fur-animal station, and he was much interested in the work conducted there and to learn of the great developments that have been made since its establishment.

Attend Fur Farmers' Meeting in New Jersey.--Mr. Ashbrook and Dr. K. B. Hanson attended the annual meeting of the New Jersey Fur Farmers' Association in Newark, N. J., on December 8. Mr. Ashbrook addressed the meeting on the various lines of fur-farming work being conducted by the division.

Fur Farming in Norway.--Dr. L. Rochmann, chief inspector of the Silver-Fox Breeders Association, at Bergen, Norway, visited the Fur-Animal Experiment Station, at Saratoga Springs, on December 6. The association he represents contemplates establishing a fur-animal experiment station for the benefit of the thousand or more fur farmers now in Norway. He was much impressed with the plan of the farm at Saratoga Springs and the work that is being conducted there.

Doctor Hanson's father, who has recently returned from Norway, reports that a boom in silver-fox farming is sweeping that country and that the raising of these animals was discussed in practically every hotel he visited. It will be of interest to members of the Survey to know that Doctor Hanson's father has the distinction of having had conferred on him the Order of Saint Olaf in recognition of his research in library science.

Live Fox Exhibit in Cleveland, Ohio.--Dr. J. E. Shillinger reports that of 418 foxes examined by him and Doctor Hanson at the Fifth Annual Live Fox and Pelt Exhibit, held at Cleveland, Ohio, from November 25 to December 1, only 2 animals were barred from the exhibit cages because of suspicious symptoms of infectious disease. The animals exhibited at the show came from 35 ranches, some as far west as Iowa and Minnesota, east to Maine, and south to southern Virginia. The animals were of uniformly good quality and the various classes were closely contested. A number of Canadian fox ranchers visited the show, as well as Dr. L. Rochmann, of Norway.

New Disease Affecting Foxes.--An unusual cause of death has been found by Doctor Shillinger on a fox ranch in northeastern Ohio. Thirteen animals in a herd of 70 died within a period of eight days. Autopsy showed in all animals examined a perforating gastric ulcer, but no other lesions. The occurrence of this peculiar pathological condition as an enzootic is difficult to explain and has not been previously reported.

Aids in Outbreak on Fox Ranch.--Dr. Earle Dewey, who is working on the cooperative project of fur-animal diseases at the University of Minnesota, was called to a ranch in Hamburg, Wis., early in December to aid in controlling an outbreak of lungworm trouble among foxes.

Experiment Made in Treatment of Lungworms.--Dr. Karl B. Hanson visited a fox ranch in South Ryegate, Vt., on December 10 and 11, for the purpose of testing the efficacy of the tracheal swab in the treatment of lungworms in foxes.

Doctor Nelson Visits Rabbit Station.--On November 30, Dr. E. W. Nelson was a visitor at the U. S. Rabbit Experiment Station, at Fontana, Calif. Plans for the establishment of the station were begun while he was chief of the Bureau, and this was his first opportunity to visit the station since its completion. He expressed interest in all details of the work being conducted there and in the progress being made.

Developments in Rabbit Raising.--A report just received from the Rabbit Experiment Station of the Biological Survey, at Fontana, Calif., states that during the past year the rabbit industry in southern California has been further stimulated by the heavy demand from other parts of the United States for breeding stock. It is estimated that orders for approximately fifteen carloads have been received. A considerable industry also is developing in connection with the handling of rabbit pelts. The return from the pelts of rabbits annually consumed in and around Los Angeles is approximately \$200,000. Several suburban communities have been built up in various sections of southern California based on commercial rabbit raising. Progress is being made in the development of better market conditions as a result of this community production, and indications are that in the near future they will be seeking markets outside of California for their product.

ECONOMIC INVESTIGATIONS

Wanted, Monthly News from Field.--Since the monthly narrative reports were discontinued news items for THE SURVEY have been coming in somewhat irregularly. It is suggested, therefore, that the field men of the Division mail suitable items monthly to reach Washington by the tenth of each month.

"Two Toes" Caught.--One of the hunters of the Oklahoma-Arkansas district in sending in his last month's pelts to J. C. Gatlin, leader of predatory-animal control in that district, says, "You will find the left front foot gone from wolf No. 17. Two toes were taken off by a bounty hunter's trap last spring, and I caught the wolf by the same foot and it gnawed off the other two toes. This wolf has killed 30 pigs, two goats, and a calf in the past 30 days."

Destructive Wolf Caught in Oklahoma.--A large female wolf caught by a Government hunter in Oklahoma is reported to have killed \$1,000 worth of hogs and sheep for one stockman, in addition to large losses inflicted on others. One private hunter had been on the trail of this wolf for five years.

91 Wolves Taken in Oklahoma-Arkansas District.--Since the beginning of predatory-animal operations in the Oklahoma-Arkansas district, during August, incomplete figures indicate that 91 wolves have been caught in the two States by a comparatively small force of trappers working under the supervision of Leader Gatlin.

High Catches made by Hunters.--Hunter Joe F. Bell, of Oklahoma, made the high catch for his district for the month by turning in the scalps of ten wolves and two bobcats. This band of wolves, including six large black ones, which was caught near Stapp, Okla., had killed \$1,500 worth of livestock this spring. Mr. Bell reports taking almost a pound of buckshot from the hide of one wolf known as "Old Gray Jumbo" that had quite a reputation as a killer.

Hunter Les Weilmünster, of Nevada, took, on the average, 95 coyotes monthly during August, September, and October.

Hunter Ed Hines tells how he caught a large female wolf on October 20 near Talihina, Okla. He reports that on riding up to his trap set and finding the trap gone, he trailed the wolf and the trap for about 200 yards and found the animal hung up by the drag hook in oak brush. When he approached the wolf on foot, she made a lunge at him and jerked out of the trap. Hines knocked her down with a shot when only a few feet away, but she got up and ran into the brush. Dashing to his horse, he mounted and vigorously pursued and finally captured her after two more shots. It seems as if Hines has been practicing at his rodeos for these "Wild West" stunts. It takes a lot of qualifications to make a successful wolf hunter, and Hines evidently has the majority of them.

Increased Interest in Rodent Control.--More than 42 per cent more acreage was freed of rodent pests during the past twelve months in Arizona than during the previous year, according to figures just compiled by D. A. Gilchrist, leader of rodent control in that State. During the past year 793,000 acres were treated with poisoned bait as compared with 557,000 the previous year. More than 130,000 pounds of poisoned bait were used during the past twelve months, or an increase of 32 per cent over the previous year.

Water Users Cooperate in Pocket-Gopher Control.--At the regular meeting of the Yuma (Ariz.) Water Users Association held on December 3, the association voted to cooperate with the Biological Survey in a pocket-gopher-catching contest wherein the school children will compete to see who can turn in the most pocket-gopher tails at the end of 30 days. The Water Users agreed to pay all the cash prizes for the highest catches in each school. The contest will be supervised by E. M. Mercer, of the Arizona district, who presented the matter to the board for consideration.

San Carlos Project Launches Drive Against Pocket Gophers.--The Coolidge Dam is now completed at San Carlos, Ariz., and is storing water for use next spring on the San Carlos irrigation project near Florence and Casa Grande, Ariz. The operating committee of the project has set aside sufficient money to employ a crew of men to poison and trap the pocket gophers. The work was started in November and is being supervised by Ben E. Foster, of the Arizona district.

Pecan Growers Cooperate in Rodent Control.--The pecan raisers of Arizona held their first annual "Pecan Day" at Yuma on November 1. Mr. Gilchrist was among those who addressed the gathering. The pecan growers have been carrying on a campaign against the pocket gophers in cooperation with the Survey. On the average, six pocket gophers to the acre have been poisoned or trapped during the season. In one of the groves visited at Yuma the owner has harvested 1,394 pounds of pecans to the acre and received 60 cents a pound for the nuts, totaling \$836.40 an acre. His trees are planted 17 to the acre and are only eight years old. The owner pointed out that each pecan tree was worth \$492, as it has paid 10 per cent interest on that valuation this year, and that he did not intend to let pocket gophers destroy such valuable property.

Rat Film Popular.--E. M. Mills, of the Eastern Rodent Control District, stationed at Amherst, Mass., has shown the film "How to Get Rid of Rats" 80 times, to a total attendance of approximately 8,000 persons.

Employee Suspended.--Because of information reaching the Bureau regarding his illegal killing of an elk, one of the assistants in predatory-animal control has been suspended by the Secretary for three months pending a further investigation.

Lectures.--Mr. Young on December 19 gave an illustrated lecture before the Brooklyn Institute of Arts and Sciences, Brooklyn, N. Y., on the subject, "The Control of the Predatory Animals."

W. E. Crouch on December 5 talked on the Economic Importance of Rodent Control to Agriculture at the weekly Extension Conference of the Department in Washington. His talk was illustrated with lantern slides.

James Silver on December 3 gave a talk on Rat Control over the Department's noonday network program, broadcast by the National Broadcasting Company.

Sympathy is extended to Adolph Hamm, assistant leader of rodent control in the Wyoming district, in the death of his wife, which occurred on November 19.

GAME AND BIRD CONSERVATION

Advisory Board Meets.--The annual meeting of the Advisory Board, Migratory Bird Treaty Act, was held at the Cosmos Club, Washington, D. C., on December 6, with 14 of the 22 members in attendance.

New Assistant Appointed.--George A. Hossick, formerly clerk of the Committee on Public Lands, House of Representatives, was appointed junior administrative assistant in the Washington office on December 3. Mr. Hossick will assist in details pertaining to the issuance of permits under the migratory-bird treaty act and regulations.

Back on Job after Illness.--Game Protector P. S. Farnham, of Owego, N. Y., returned to duty on November 28, after about a week's illness.

Plume Birds Increasing, Protector Believes.--Protector J. V. Kelsey writes that on November 26, while crossing a cypress swamp about 25 miles east of Tallahassee, Fla., he saw a group of more than 100 American egrets. According to Mr. Kelsey, this species is appearing in good numbers and is widely scattered over the State. It is his opinion that under the protection now afforded, other species of plume birds also are steadily increasing in numbers in Florida.

Ducks in Florida Arrive Early.--Protector Kelsey reported that a good number of northern ducks were to be seen in Florida during the week of November 4 to 10, an exceptionally early date for the birds to be there in such numbers.

Lighted Smokestack Menace Removed.--Game Protector W. H. Ransom advises that the superintendent of the Anaconda Copper Mining Company, at Great Falls, Mont., has ordered that for two months each fall during the waterfowl migrating period the lights from the reflectors illuminating the company's fume stack be turned off, so that the danger to the migrating waterfowl may be removed. This smelter fume stack is 500 feet high, with a diameter of 75 feet at the base and 50 feet at the top, and has been well illuminated at night by permanent reflectors, which had the effect of dazzling the birds. Mr. Ransom states that both ducks and geese had been killed in the past by flying against the tall stack, and, although the number so killed was not large, the superintendent thought it best to remove the menace during the two months that the birds migrate. According to Mr. Ransom, the superintendent has received letters commending him for his voluntary order and for his interest in preserving the waterfowl from needless destruction.

Wardens Find Boys in Trouble.--On November 9, while Game Protector O. D. Steele and State Game Warden Willey were on board the motorboat Canvasback in Division Creek on the north shore of Choptank River, Md., a motorboat drew alongside and notified them that a man on a skipjack near there was calling for help. They ran their boat around to the skipjack and found two frantic boys, 14 and 16 years of age, whose father, brother, and another man had drowned several hours before, and they had been unable to get help or to operate their boat. Protector Steele and Warden Willey took the boys to Cambridge, Md., and notified the local authorities of the accident.

Deputy Warden Shot At.--On November 18, U. S. Deputy Game Warden R.H. Rogalla, while on active duty as a Federal officer, was shot at twice with an automatic shotgun by one of two men who had been seen shooting at ducks at the northern end of Rice Lake, Minn., after sunset, and whom he was endeavoring to apprehend. The one who did the shooting was only about 50 feet distant at the time, and Warden Rogalla, who was the target, states that he could have caught him had he not stepped into a hole and fallen. Both alleged violators escaped in the darkness.

First Elk Appear at Winter Refuge.--The first elk seen at the Elk Refuge, Wyo., this season was a lone cow that appeared on the Ditwater tract on the morning of November 15. By the last of the month several small bands had come to the refuge but stayed only a short time and then moved into the near-by foothills.

Brant Arrive Early at Dungeness Spit.--Several flocks of brant arrived at Dungeness Spit Bird Reservation, Wash., about the middle of November, an early date for them, as they usually do not arrive before January. Thousands of ducks also are on this refuge, the mallards being plentiful, but in poor condition.

Sullys Hill Notes.--Very few geese passed over Sullys Hill Game Preserve, N. Dak., and vicinity this season. There were many ducks, but hunting was reported poor, probably on account of the good weather and lack of water in the sloughs. Rudolph Dieffenbach, land valuation engineer, of the Winona office, visited Sullys Hill November 22-27.

Personnel.--Miss Miriam J. Horkan, stenographer, has been transferred from the Winona, Minn., office to the office of D. H. Madsen, superintendent of the Bear River Migratory Bird Refuge, Salt Lake City, Utah. George D. Clyde, has been appointed hydraulic engineer at the Bear River Refuge.

Dam Dynamited at Big Lake.--The dam at the north end of Big Lake Bird Reservation, Ark., which was constructed in order to maintain the water at a proper level, was dynamited on the night of November 23 by persons unknown.

Alaska Game Commission Meets.--The Alaska Game Commission, after an 11-day session ended its fifth annual meeting on November 20. By a change in the date of the annual meeting, this was the second held in 1928, the next one to be in the fall of 1929. Proposed changes in the regulations under the Alaska game law were drawn up for submission to the Secretary of Agriculture

Islands Eliminated from Alaskan Bird Reservation.--Seven of the larger islands of the Aleutian Chain have been eliminated from the Aleutian Islands Bird Reservation, Alaska, by Executive order signed by President Coolidge on November 23, 1928. These islands, Sanak, Akun, Akutan, Tigalda, Unalaska, Umnak, and Sedanka, are thus restored to the unreserved public domain of the Territory and made subject to the laws applicable to such unreserved public lands, on recommendation of the Secretaries of Agriculture and the Interior. Secretary Jardine had informed Secretary West that the islands were not especially important or desirable for wild-life purposes and that in his estimation they would be of greater value for stock raising and other possible commercial uses. The new order does not include the closely adjacent rocks and small islands, some of which are of special value as sea-bird rookeries, and these will continue to serve as wild-life refuges. Similar action was taken by Executive order some months ago, when ten islands along the southern coast of Alaska, which had been under the jurisdiction of the Department of Agriculture since 1920, were turned over to the control and jurisdiction of the Department of the Interior, as they were of value for leasing for fur-farming purposes.

Importations of foreign birds and mammals showed marked activity during the 30 days ending December 13, a total of approximately 80,000 birds being brought in at the ports of New York and Philadelphia. Of this number more than 52,000 arrived at the same ports during the first ten days of December. Among the mammals imported during the month was a gorilla from Africa for the National Zoological Park, said to be the ninth specimen to be brought to the United States.

Treaty-Act Cases Terminated--Reports Received During November

<u>Protector.</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>	<u>Fine</u>
Holland*	2	Louisiana	Killing night herons	\$25 each and costs
Holland*, Pertuit**, Earhart**, St. Germain**	1	"	Possessing a rail in close season	\$25 and costs
" "	1	"	Killing a rail in close season	\$25 and costs
" "	1	"	Killing a duck and a coot in close season	\$50 and costs
Holland*, Pertuit**, Thompson**, Landry**	2	"	Killing and possessing night herons	\$25 each and costs
Kelsey, Saunders***	5	Florida	Hunting ducks from a motor boat	\$10 each
Kelsey, Winne**	1	"	Shooting at ducks from a motor boat	\$10
Oberhaus*, Taylor*, White**	2	Alabama	Hunting ducks from a motor boat	\$10 each
Shaver, Harris*	3	Illinois	Possessing ducks in close season	\$15 each and costs of \$35 each
Steele, Holmes	2	Nebraska	Hunting and possessing ducks in close season	\$1 each
Tonkin	2	Nevada	Hunting, killing, and possessing ducks in close season	\$15 each and costs of \$5 each
Whitehead	2	Georgia	Hunting mourning doves in close season	\$10 each

*U. S. Deputy Game Warden.

**Deputy State Game Warden.

***Cooperator.

Cases Reported for Prosecution

<u>Protector</u>	<u>Cases</u>	<u>State</u>	<u>Violation</u>
Clarkson	1	Texas	Hunting and possessing a willet
Hoffman, Holland*, Pertuit**, St. Germain**	2	Louisiana	Selling ducks
Hoffman, Holland*, St. Germain**	2	"	Selling ducks
Holland*	3	"	Killing night herons
Holland*, Book**	11	"	Killing and possessing geese in excess of daily bag limit
Holland*, Cabirac**	2	"	Killing coots in close season and after sunset
Holland*, Earhart**, Pertuit**, St. Germain**	1	"	Possessing and offering ducks for sale
" "	1	"	Selling ducks
Holland*, Earhart**, Pertuit**, St. Germain**, Wendell**	1	"	Offering for sale and selling ducks
Holland*, Earhart** Pertuit**, Wendell**	1	"	Selling ducks
Holland*, Foolkes*	1	"	Exceeding bag limit on ducks
Holland*, Pertuit**, Schreiber**	1	"	Selling ducks
Holland*, Pertuit**, Thompson**	2	"	Killing and possessing mourning doves in close season
Holland*, Savastano**	1	"	Killing and possessing ducks in close season
" "	3	"	Hunting ducks in close season
Holland*, Thompson**	3	"	Killing and possessing robins
Oberhaug*, Taylor*, White**	2	Alabama	Hunting ducks from a motor boat
Roahen	1	Illinois	Possessing a wood duck
"	2	"	Hunting and possessing wood ducks
Roahen, Scholler*	1	"	Possessing a meadowlark
Scholler*, Petersen*	2	"	Hunting coots from a motor boat
Shaver, Rogalla*, Moore**	1	"	Selling coots
Shaver, Moore**	2	"	Hunting and possessing pectoral sand- pipers
Smith	2	Maine	Hunting and killing yellowlegs
Steele, Nill*	1	Kansas	Hunting ducks after sunset
" "	1	"	Hunting and possessing pectoral sand- pipers

* U.S. Deputy Game Warden.

** Deputy State Game Warden.

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1. The first part of the paper is devoted to a general discussion of the problem.

2. In the second part, we consider the case of a single particle.

3. The third part is devoted to the case of a system of particles.

4. In the fourth part, we consider the case of a continuous medium.

5. The fifth part is devoted to the case of a system of continuous media.

6. In the sixth part, we consider the case of a system of particles and continuous media.

7. The seventh part is devoted to the case of a system of particles and continuous media.

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16. In the sixteenth part, we consider the case of a system of particles and continuous media.

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18. In the eighteenth part, we consider the case of a system of particles and continuous media.

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